



STIC Search Report

EIC 1700

STIC Database Tracking Number: 174227

TO: John McPherson

Location: REM 9C73

Art Unit : 1756

December 19, 2005

Case Serial Number: 10/606185

From: Les Henderson

Location: EIC 1700

REM 4B28 / 4A30

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Search Notes



STIC Search Results Feedback Form

EIC17000

Questions about the scope or the results of the search? Contact *the EIC searcher* or contact:

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- I am an examiner in Workgroup: Example: 1713
➤ Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

- Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC1700 REMSEN 4B28

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: John McPherson Examiner #: 70464 Date: 12/14/05
 Art Unit: 1756 Phone Number 301 571 272 1386 Serial Number: 10/606,185
 Mail Box and Bldg/Room Location: REN 9673 Results Format Preferred (circle) PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Dye-containing Curable Composition, Color Filter and Method of
Manufacturing the Same
 Inventors (please provide full names): Katsumi Araki

Earliest Priority Filing Date: 6/26/03 US 6/28/02 JP

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search for a dye of the structure

Dye-X

wherein Dye represents an acidic dye with a sulfonic acid group
 or a ~~carboxylic acid~~ carboxylic acid group;

and X represents a counter ion derived from a nitrogen-
 containing compound with a molecular weight of 250 or less
 with two or more nitrogen atoms or an aliphatic cyclic amine
 compound with a molecular weight of 250 or less.

Please be sure to ~~search for~~ include the elected species of example
 19 wherein X =



see the attached claims, exemplified X
 compounds and Example 19

STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: <u>24</u>	NA Sequence (#) _____	STN <u>\$ 1463.71</u>
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic <input checked="" type="checkbox"/>	Dr.Link _____
Date Completed: <u>12/19/05</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>30</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: <u>30</u>	Patent Family _____	WWW/Internet _____
Online Time: <u>30.0</u>	Other _____	Other (specify) _____

oping latitudes. It is also superior in the solvent resistance, curing property and heat resistance, exhibiting high productivity.

[0179] Furthermore, the present invention provides a color-filter manufacturing method with high cost performances (high efficiency and high productivity). This color-filter manufacturing method makes it possible to form and cure patterns with high sensitivity and high hardness and to prevent the elusion and mixture (mixed colors) of the dye. This color-filter manufacturing method provides a color filter superior particularly in the solvent resistance of each color pattern, in hues, in resolution, in heat resistance, and in light resistance.

What is claimed is:

1. A dye-containing curable composition comprising a binder and an organic solvent soluble dye, wherein the organic solvent soluble dye is a compound represented by the following general formula (I),

Dye- X_n

General formula (I)

wherein Dye represents an acidic dye portion having at least one of a sulfonic acid group and a carboxylic acid group; X represents a portion which is derived from at least one selected from the group consisting of a nitrogen-containing compound with a molecular weight of 250 or less having carbon, hydrogen, and two or more nitrogen atoms, and an aliphatic cyclic amine compound with a molecular weight of 250 or less having carbon, hydrogen, and one or more nitrogen atoms; and n represents a value that satisfies $0 < n \leq 5$.

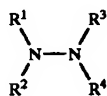
2. The dye-containing curable composition of claim 1, wherein Dye in general formula (I) is a portion derived from at least one selected from the group consisting of an azo-type acidic dye, a xanthene-type acidic dye, and a phthalocyanine-type acidic dye.

3. The dye-containing curable composition of claim 1, wherein Dye in general formula (I) is a portion derived from at least one selected from the group consisting of a monoazo-type acidic dye and a bisazo-type acidic dye.

4. The dye-containing curable composition of claim 1, wherein the at least one of a nitrogen-containing compound and an aliphatic cyclic amine compound in general formula (I) has a molecular weight of 60 to 230.

5. The dye-containing curable composition of claim 1, wherein at least one of the at least one of a nitrogen-containing compound and an aliphatic cyclic amine compound in general formula (I) has an oxidation potential of 0.75 V or less (vs. Ag/Ag⁺).

6. The dye-containing curable composition of claim 1, wherein the at least one of a nitrogen-containing compound and an aliphatic cyclic amine compound in general formula (I) is a hydrazine-type compound represented by the following general formula (II),



General formula (II)

wherein each of R^1 , R^2 , R^3 and R^4 independently represents a straight or branched alkyl group; a total number of carbon atoms in R^1 to R^4 is 14 or less; R^1 , R^2 , R^3 and R^4 may be

bonded to each other to form an aliphatic ring; and R^1 , R^2 , R^3 and R^4 may be bonded to each other to form a bicyclic ring when provided with branched chains.

7. The dye-containing curable composition of claim 1, wherein n in general formula (I) satisfies $0 < n \leq 4.5$.

8. The dye-containing curable composition of claim 1, wherein n in general formula (I) satisfies $0 < n \leq 4$.

9. The dye-containing curable composition of claim 1, wherein n in general formula (I) satisfies $0 < n \leq 3.5$.

10. The dye-containing curable composition of claim 1, wherein the organic solvent soluble dye is contained in an amount of 0.5 to 80% by mass based on a total solid component of the dye-containing curable composition.

11. The dye-containing curable composition of claim 1, wherein a content of the binder is 10 to 90% by mass based on a total solid component of the dye-containing curable composition.

12. The dye-containing curable composition of claim 1, wherein the binder is a water-soluble or alkali-soluble binder, and the dye-containing curable composition further contains a photo-polymerization initiator and a monomer or oligomer that contains at least one ethylenic unsaturated group.

13. The dye-containing curable composition of claim 12, further comprising a cross-linking agent.

14. A color filter comprising a dye-containing curable composition containing a binder and an organic solvent soluble dye, wherein the organic solvent soluble dye is a compound represented by the following general formula (I),

Dye- X_n

General formula (I)

wherein Dye represents an acidic dye portion having at least one of a sulfonic acid group and a carboxylic acid group; X represents a portion which is derived from at least one selected from the group consisting of a nitrogen-containing compound with a molecular weight of 250 or less having carbon, hydrogen, and two or more nitrogen atoms, and an aliphatic cyclic amine compound with a molecular weight of 250 or less having carbon, hydrogen, and one or more nitrogen atoms; and n represents a value that satisfies $0 < n \leq 5$.

15. The color filter of claim 14, wherein at least one of the at least one of a nitrogen-containing compound and an aliphatic cyclic amine compound in general formula (I) has an oxidation potential of 0.75 V or less (vs. Ag/Ag⁺).

16. A method of manufacturing a color filter, comprising the steps of:

applying a dye-containing curable composition containing a binder and an organic solvent soluble dye onto a support;

exposing the dye-containing curable composition through a mask; and

developing the dye-containing curable composition to form a pattern,

wherein the organic solvent soluble dye is a compound represented by the following general formula (I),

Dye- X_n

General formula (I)

wherein Dye represents an acidic dye portion having at least one of a sulfonic acid group and a carboxylic acid group; X represents a portion which is derived from at least one selected from the group consisting of a nitrogen-containing compound with a molecular

weight of 250 or less having carbon, hydrogen, and two or more nitrogen atoms, and an aliphatic cyclic amine compound with a molecular weight of 250 or less having carbon, hydrogen, and one or more nitrogen atoms; and n represents a value that satisfies $0 < n \leq 5$.

17. The method of claim 16, wherein at least one of the at least one of a nitrogen-containing compound and an

aliphatic cyclic amine compound in general formula (I) has an oxidation potential of 0.75 V or less (vs. Ag/Ag^+).

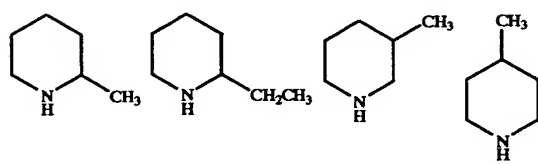
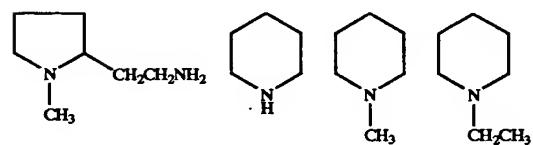
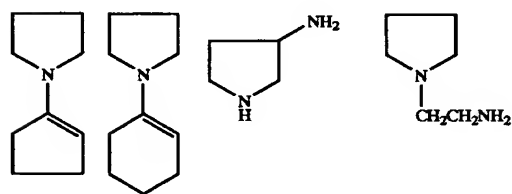
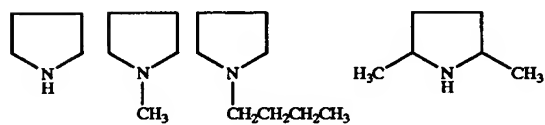
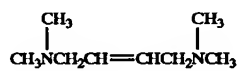
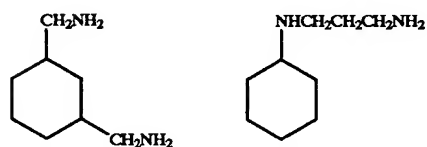
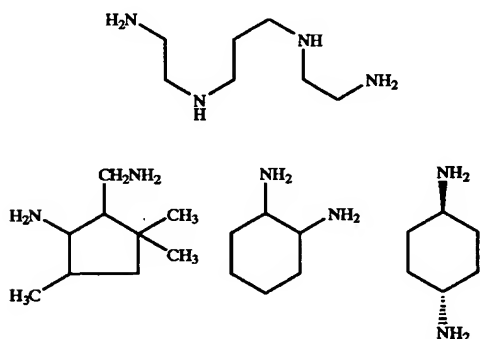
18. The method of claim 16, further comprising a step of curing the formed pattern by at least one of heating and exposure to light.

* * * * *

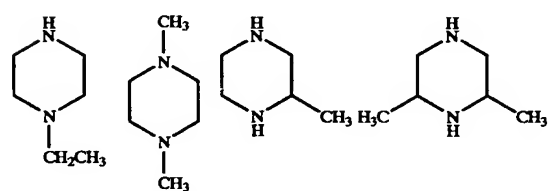
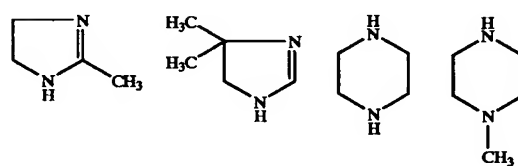
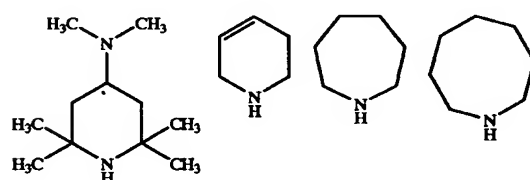
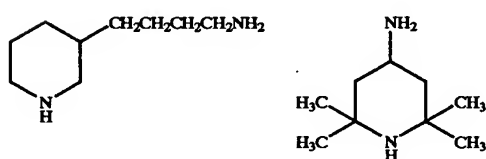
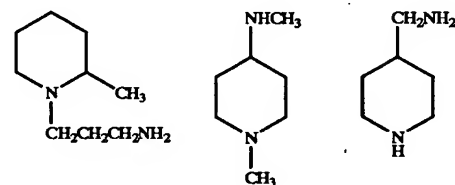
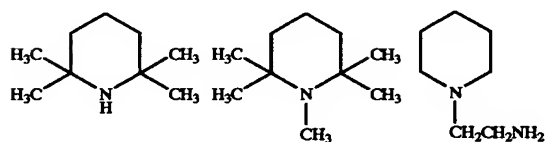
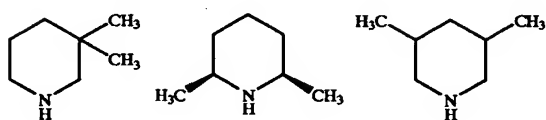
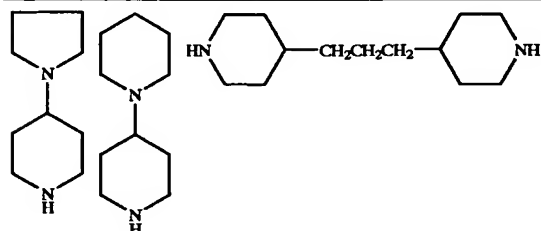
type compound represented by the following general formula (II).

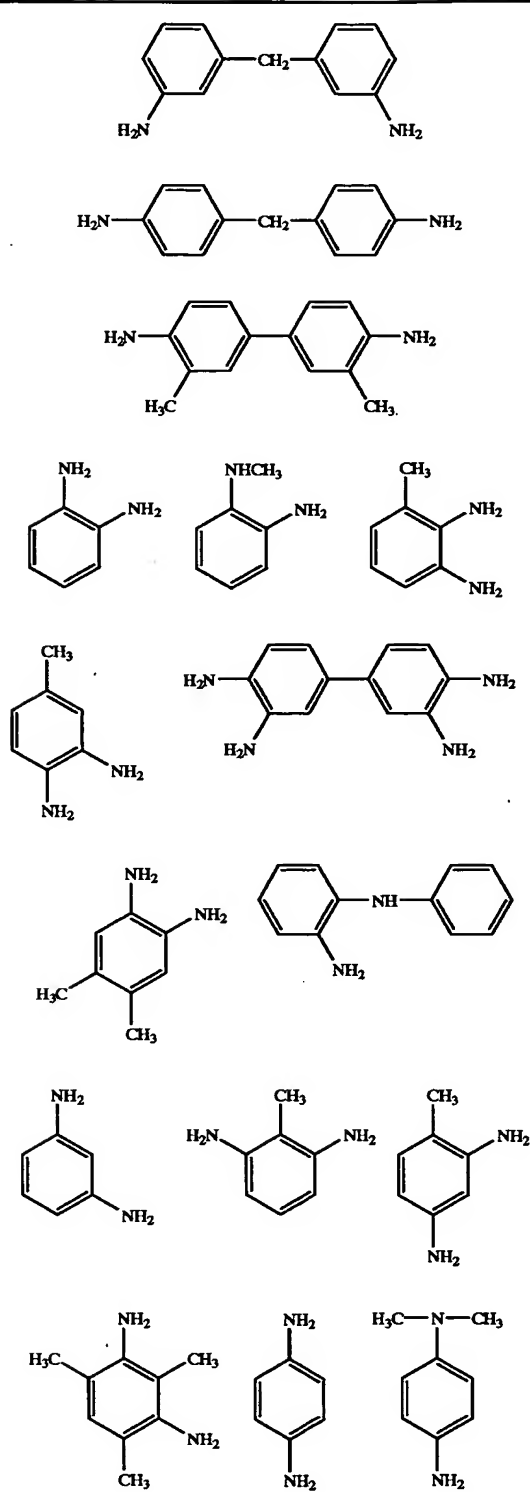


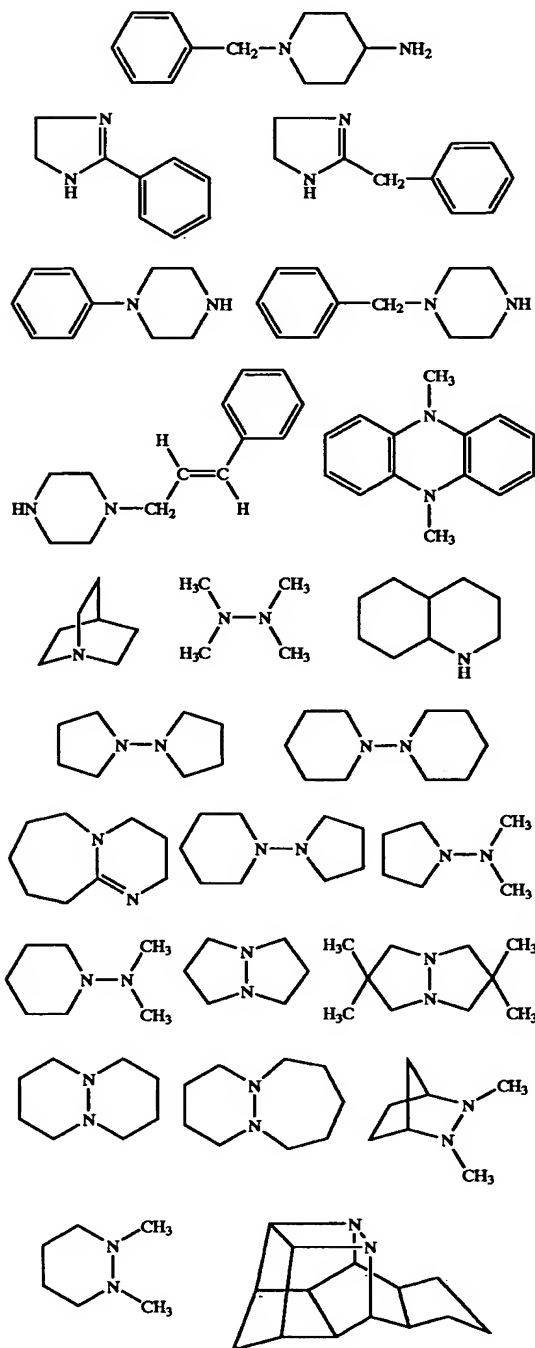
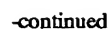
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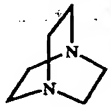
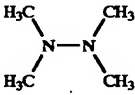
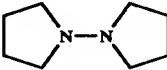
[0061] The following will explain n in general formula (I). Here, n represents a molar ratio between the molecular of the acidic dye and the nitrogen-containing compound or aliphatic cyclic amine compound that constitutes a counter ion, in other words a molar ratio (X/Dye) of X to Dye. n may be

[0171] As shown in the Examples of Table 1, superior results were obtained by using the dye-containing curable composition of the invention, containing an organic solvent soluble dye composed of a salt of an acidic dye and one of a nitrogen-containing compound with a molecular weight of 250 or less having two nitrogen atoms and a cyclic amino compound having no unsaturated bond. Further, the developing property of unexposed portions and the curing property of exposed portions (developing film remaining property) are superior, and consequently a pattern image having

Examples 19 to 21

[0174] A dye resist solution is prepared, a pattern image is formed, and the evaluation is carried out in the same manner as in Example 1 except in that in each example the tetramethyl ethylene diamine salt [X/Dye (molar ratio)=1.50] of acid yellow 42 used for preparing the dye resist solution is replaced by one of organic solvent soluble dyes shown in the following Table 2.

TABLE 2

	Organic solvent soluble dye (Dye · X _n)				Unexposed portion	Exposed portion film-	Heat resistance	Light resistance	Solvent resistance
	Dye	X	Mw	X/Dye ratio [mol] (=n)	developing property [%]	remaining rate [%]	ΔEab (200° C./1 h)	ΔEab (2M Lux · h)	(10 min. in EL)
Example 19	Acid Yellow 42		112	2.00	100	96	1.7	2.5	1.3
Example 20	Acid Yellow 111		88	1.00	100	98	2.3	2.7	1.9
Example 21	Acid Yellow 112		140	1.00	100	98	2.5	2.6	1.7

1*: based on ditolylguanidine salt (per weight)

a high resolution is provided. Moreover, even when the formed pattern contacts a solvent, the shape and hues are not damaged, providing superior solvent resistance. Changes due to heat and light are also reduced, exhibiting superior heat resistance and light resistance. On the other hand, inferior results are shown in Comparative Examples 1 or 2, in which a dye-containing curable composition contains an organic solvent soluble dye that has, as a counter ion, a cyclic amino compound having an unsaturated bond with a molecular weight exceeding 250 or an aromatic amine (nitrogen-containing compound) having only one nitrogen atom. Inferior results are obtained in the solvent resistance, heat resistance and light resistance. Moreover, Comparative Example 2 fails to provide sufficient developing property and pattern curing property (film remaining rate).

Examples 10 to 18

[0172] Pattern images are obtained in the same operations as Examples 1 to 9 except in that the glass substrate used in Examples 1 to 9 is replaced by a silicon wafer substrate. With respect to the heat resistance, unexposed portion developing property and exposed portion film-remaining rate, the same results as Examples 1 to 9 are obtained.

[0173] Examples 10 to 18 are different from Examples 1 to 9 in that the silicon wafer substrate is used; however, since the dye-containing curable composition is applied onto the undercoat layer through all the Examples 1 to 18, there are virtually no difference, making it possible to provide the same performances.

[0175] As shown in Table 2, superior results are obtained by using the organic solvent soluble dye of the Examples, in which the organic solvent soluble dye is composed of a salt of an acidic dye and one of a nitrogen-containing compound having two nitrogen atoms with a molecular weight of 250 or less and a cyclic amino compound having no unsaturated bond. The developing property of unexposed portions and the curing property of exposed portions (developing film remaining property) are superior, and consequently a pattern image having a high resolution is provided.

[0176] Further, superior solvent resistance without causing damages to the shape and hues even when the formed pattern contacts a solvent. Moreover, changes due to heat and light are also reduced, exhibiting superior heat resistance and light resistance.

[0177] According to the present invention, it becomes possible to provide a dye-containing curable composition having high sensitivity, superior curing property, and wide developing latitudes. In particular, it is superior in the solvent resistance in an image portion (for example, pixels) after the curing process, in curing property, and in heat resistance. Thus, it becomes possible to form a good pattern image having superior hues with a high degree of resolution.

[0178] Additionally, according to the present invention, it is possible to provide a color filter, which is produced with the above-mentioned dye-containing curable composition, having high transmittance, high resolution, and wide devel-

=> d his ful

(FILE 'HOME' ENTERED AT 08:26:25 ON 19 DEC 2005)

FILE 'HCAPLUS' ENTERED AT 08:26:51 ON 19 DEC 2005

E US20040009414/PN

L1 1 SEA ABB=ON PLU=ON US20040009414/PN
D ALL
SEL RN

FILE 'REGISTRY' ENTERED AT 08:28:39 ON 19 DEC 2005

L2 16 SEA ABB=ON PLU=ON (107-15-3/BI OR 110-18-9/BI OR
110-70-3/BI OR 110-85-0/BI OR 12217-34-4/BI OR
12220-75-6/BI OR 12220-78-9/BI OR 12239-17-7/BI OR
12239-18-8/BI OR 123-75-1/BI OR 18389-95-2/BI OR
280-57-9/BI OR 61901-51-7/BI OR 6375-55-9/BI OR
6408-78-2/BI OR 6415-12-9/BI)
D SCAN

D L2 1-16 RN STR

E XANTHENE/CN

L3 1 SEA ABB=ON PLU=ON XANTHENE/CN
D SCAN
D FIDE

E PHTHALOCYANINE/CN

L4 1 SEA ABB=ON PLU=ON PHTHALOCYANINE/CN
D SCAN
D FIDE
D SCAN L3

L5 586894 SEA ABB=ON PLU=ON (C(L)N(L)H)/ELS(L)3/ELC.SUB

L6 226508 SEA ABB=ON PLU=ON 1-14/C AND L5

FILE 'STNGUIDE' ENTERED AT 10:28:27 ON 19 DEC 2005

FILE 'REGISTRY' ENTERED AT 10:32:01 ON 19 DEC 2005

L7 196951 SEA ABB=ON PLU=ON L6 AND 1-4/N
L8 8935 SEA ABB=ON PLU=ON L7 AND BICYCLO?
L9 188016 SEA ABB=ON PLU=ON L7 NOT L8
L10 125761 SEA ABB=ON PLU=ON L9 AND 1-2/N
L11 65552 SEA ABB=ON PLU=ON L9 AND 3-4/N
L12 62476 SEA ABB=ON PLU=ON L9 AND 1/N
L13 63771 SEA ABB=ON PLU=ON L9 AND 2/N

FILE 'HCAPLUS' ENTERED AT 10:41:04 ON 19 DEC 2005

L14 26542 SEA ABB=ON PLU=ON L8
L15 20 SEA ABB=ON PLU=ON L14 AND COUNTER(A) ION
D SCAN TI
L16 0 SEA ABB=ON PLU=ON L1 AND L15
L17 32271 SEA ABB=ON PLU=ON (PIGMENT? OR DYE?) (2A) ACID?
L18 62 SEA ABB=ON PLU=ON L17 AND L14
L19 1 SEA ABB=ON PLU=ON L1 AND L18
D SCAN TI L18
L20 249 SEA ABB=ON PLU=ON XANTHEN? AND L17
L21 1 SEA ABB=ON PLU=ON L20 AND L14
D SCAN
L22 7850 SEA ABB=ON PLU=ON XANTHEN?
L23 54 SEA ABB=ON PLU=ON L22 (2A) L17

L24 1 SEA ABB=ON PLU=ON L23 AND L14
D SCAN
D HITSTR
D L14 1-5 HITSTR

FILE 'REGISTRY' ENTERED AT 10:53:40 ON 19 DEC 2005

L25 2092 SEA ABB=ON PLU=ON L7 AND TRICYCL?

FILE 'HCAPLUS' ENTERED AT 10:54:23 ON 19 DEC 2005

L26 15595 SEA ABB=ON PLU=ON L25

L27 37 SEA ABB=ON PLU=ON L26 AND L17
D 1-5 FHITSTR

L28 0 SEA ABB=ON PLU=ON L27 AND L22

L29 0 SEA ABB=ON PLU=ON L26 AND L20

L30 37530 SEA ABB=ON PLU=ON ?PHTHALOCYANIN?

L31 408 SEA ABB=ON PLU=ON L30 (L) L17

L32 0 SEA ABB=ON PLU=ON L31 AND L14

L33 1 SEA ABB=ON PLU=ON L31 AND L25
D SCAN TI

L34 863950 SEA ABB=ON PLU=ON L10

L35 3417 SEA ABB=ON PLU=ON L34 AND L17

L36 528 SEA ABB=ON PLU=ON L34 (L) L17

L37 4930 SEA ABB=ON PLU=ON (AZO OR DIAZO OR MONOAZO OR (MONO
OR DI) (W) AZO) (L) L17

L38 8 SEA ABB=ON PLU=ON (L23 OR L31 OR L36) AND L14

L39 0 SEA ABB=ON PLU=ON (L23 OR L31 OR L36) AND L15

L40 1 SEA ABB=ON PLU=ON (L23 OR L31 OR L36) AND L26
D SCAN

L41 573 SEA ABB=ON PLU=ON (L23 OR L31 OR L36) AND L34

L42 217029 SEA ABB=ON PLU=ON L11

L43 528 SEA ABB=ON PLU=ON (L23 OR L31 OR L36) (L) L34

L44 67 SEA ABB=ON PLU=ON (L23 OR L31 OR L36) AND L42

L45 981 SEA ABB=ON PLU=ON L23 OR L31 OR L36

L46 QUE ABB=ON PLU=ON MOIET? OR UNIT? OR GROUP? OR FUNC?
OR FRAGMENT? OR PORTION? OR SUBSTITUENT?

L47 37393 SEA ABB=ON PLU=ON L46 (2A) ((SULFURIC OR SULFONIC OR
CARBOXYLIC) (A) ACID? OR SO3H OR CO2H OR COOH)

L48 4387 SEA ABB=ON PLU=ON L47 (L) (PIGMENT OR DYE)

L49 285 SEA ABB=ON PLU=ON L47 (L) ((L22 OR L30 OR (AZO OR
DIAZO OR MONOAZO OR (MONO OR DI)) (W) AZO))

L50 1019985 SEA ABB=ON PLU=ON L14 OR L26 OR L34 OR L42

L51 582 SEA ABB=ON PLU=ON L50 AND L45
D QUE

L52 QUE ABB=ON PLU=ON (CURE# OR CURING# OR CURAB? OR
CROSS (W) LINK? OR CROSSLINK? OR CATALY? OR HARDEN?)

L53 57 SEA ABB=ON PLU=ON L51 AND L52

L54 13774 SEA ABB=ON PLU=ON (COLOR? OR COLOUR?) (2A) FILTER?

L55 2 SEA ABB=ON PLU=ON L53 AND L54
D SCAN

L56 0 SEA ABB=ON PLU=ON L1 AND L55

L57 0 SEA ABB=ON PLU=ON L53 AND L1

L58 0 SEA ABB=ON PLU=ON L51 AND L1

L59 592 SEA ABB=ON PLU=ON L54 AND L50

L60 1 SEA ABB=ON PLU=ON L59 AND L1
D SCAN

L61 34 SEA ABB=ON PLU=ON L59 AND L17

L62 1 SEA ABB=ON PLU=ON L1 AND L61
 D QUE L49
 L63 728 SEA ABB=ON PLU=ON L30 AND L17
 L64 1204 SEA ABB=ON PLU=ON L20 OR L63 OR L49
 L65 9 SEA ABB=ON PLU=ON L64 AND L59
 D SCAN
 D SCAN TI L65
 D QUE

FILE 'REGISTRY' ENTERED AT 12:03:40 ON 19 DEC 2005

E ACID YELLOW/CN
 L66 89 SEA ABB=ON PLU=ON ACID YELLOW?/CN
 E ACID BLUE/CN
 L67 143 SEA ABB=ON PLU=ON ACID BLUE?/CN
 E ACID RED/CN
 L68 178 SEA ABB=ON PLU=ON ACID RED?/CN

FILE 'HCAPLUS' ENTERED AT 12:07:21 ON 19 DEC 2005

L69 6225 SEA ABB=ON PLU=ON L66
 L70 8009 SEA ABB=ON PLU=ON L66 OR YELLOW? (A) ACID?
 L71 6653 SEA ABB=ON PLU=ON L67
 L72 8088 SEA ABB=ON PLU=ON L71 OR BLUE? (A) ACID?
 L73 12944 SEA ABB=ON PLU=ON L68
 L74 28798 SEA ABB=ON PLU=ON L68 OR RED? (A) ACID?
 L75 38963 SEA ABB=ON PLU=ON L70 OR L72 OR L74
 L76 4015 SEA ABB=ON PLU=ON L75 AND L50
 L77 690 SEA ABB=ON PLU=ON L76 AND L52
 L78 12 SEA ABB=ON PLU=ON L77 AND L54
 L79 1 SEA ABB=ON PLU=ON L78 AND L1
 D 1-5 FHITSTR
 D L78 1-5 FHITSTR
 D SCAN
 L80 16301 SEA ABB=ON PLU=ON OXIDAT? (A) POTENTIAL?
 L81 2551 SEA ABB=ON PLU=ON AG (A) AG
 L82 99 SEA ABB=ON PLU=ON L80 AND L81
 D 1-5 KWIC
 L83 24 SEA ABB=ON PLU=ON L50 AND L82
 D SCAN TI
 L84 0 SEA ABB=ON PLU=ON L83 AND L17
 D QUE L49
 L85 42271 SEA ABB=ON PLU=ON L50 AND (DYE? OR PIGMENT?)
 L86 0 SEA ABB=ON PLU=ON L85 AND L83
 L87 114 SEA ABB=ON PLU=ON L85 AND (L80 OR L81)
 D 1-5 KWIC
 L88 108 SEA ABB=ON PLU=ON L85 AND L80
 L89 6 SEA ABB=ON PLU=ON L85 AND L81
 D SCAN
 D L89 1-6 KWIC
 L90 56 SEA ABB=ON PLU=ON L80 (L) L81
 L91 0 SEA ABB=ON PLU=ON L90 AND L85
 D L88 1-10 KWIC
 L92 8 SEA ABB=ON PLU=ON L88 AND L17
 D 1-8 KWIC
 L93 13649 SEA ABB=ON PLU=ON (PIGMENT? OR DYE?) (A) ACID?
 L94 5 SEA ABB=ON PLU=ON L88 AND L93
 D 1-5 KWIC

L95 3 SEA ABB=ON PLU=ON L92 NOT L94
D 1-3 KWIC

FILE 'REGISTRY' ENTERED AT 12:31:48 ON 19 DEC 2005

E 18389-95-2/RN
L96 1 SEA ABB=ON PLU=ON 18389-95-2/RN
D SCAN
E 6415-12-9/RN
L97 1 SEA ABB=ON PLU=ON 6415-12-9/RN
D SCAN
E 280-57-9/RN
L98 1 SEA ABB=ON PLU=ON 280-57-9/RN
D SCAN

FILE 'HCAPLUS' ENTERED AT 12:38:44 ON 19 DEC 2005

L99 28 SEA ABB=ON PLU=ON L96
L100 122 SEA ABB=ON PLU=ON L97
L101 5308 SEA ABB=ON PLU=ON L98
L102 18 SEA ABB=ON PLU=ON L101 AND L17
L103 1 SEA ABB=ON PLU=ON L1 AND L102
D SCAN TI
D SCAN TI L102
L104 5 SEA ABB=ON PLU=ON L102 AND L52
D SCAN TI
L105 1 SEA ABB=ON PLU=ON L17 AND L99
D SCAN
L106 1 SEA ABB=ON PLU=ON L17 AND L100
D SCAN
L107 49 SEA ABB=ON PLU=ON ((L99 OR L100 OR L101)) AND (L93
OR L75 OR L48 OR L49 OR L37 OR L31 OR L20)
D 1-5 FHITSTR
D L107 1-5 KWIC
L108 12 SEA ABB=ON PLU=ON L107 AND L52
D 1-12 KWIC
D QUE L52
L109 QUE ABB=ON PLU=ON CURE# OR CURING# OR CURAB? OR
CROSS(W)LINK? OR CROSSLINK? OR HARDEN?
L110 5 SEA ABB=ON PLU=ON L107 AND L109
D SCAN
D QUE STAT
D 1-5 FHITSTR
L111 29 SEA ABB=ON PLU=ON L21 OR L24 OR L33 OR L38 OR L40 OR
L55 OR L62 OR L65 OR L78 OR L79
L112 51 SEA ABB=ON PLU=ON L111 OR L89 OR L92 OR L94 OR L95
OR (L103 OR L104 OR L105 OR L106) OR L110
L113 62 SEA ABB=ON PLU=ON L112 OR L102
D QUE L37
D QUE L47
D QUE L48
D QUE STAT L49
L114 43371 SEA ABB=ON PLU=ON (L22 OR L30 OR L49) (2A)L93 OR L48
OR L75
L115 4579 SEA ABB=ON PLU=ON L114 AND L50
L116 175 SEA ABB=ON PLU=ON L115 AND L109
L117 44 SEA ABB=ON PLU=ON 116 AND L54
D SCAN TI

L118 0 SEA ABB=ON PLU=ON L117 AND L82
 L119 0 SEA ABB=ON PLU=ON L117 AND L80
 L120 0 SEA ABB=ON PLU=ON L117 AND L81
 L121 64751 SEA ABB=ON PLU=ON (OXID? OR REDUC? OR REDOX) (A) POTENT
 ?
 L122 0 SEA ABB=ON PLU=ON L117 AND L121
 L123 9 SEA ABB=ON PLU=ON L113 AND L121
 L124 6 SEA ABB=ON PLU=ON L113 AND L81
 L125 59 SEA ABB=ON PLU=ON L117 OR L123 OR L124
 E LCD/CT
 E LIQUID CRYSTAL DISPLAYS/CT
 L126 25680 SEA ABB=ON PLU=ON LIQUID CRYSTAL DISPLAYS/CT
 L127 62800 SEA ABB=ON PLU=ON LIQUID (3A) CRYSTAL (3A) DISPLAY OR
 LCD OR L(W) C(W) D
 L128 1 SEA ABB=ON PLU=ON L126 AND L125
 D SCAN
 L129 0 SEA ABB=ON PLU=ON L124 AND L127
 L130 3 SEA ABB=ON PLU=ON L113 AND L126
 L131 5 SEA ABB=ON PLU=ON L113 AND L127
 L132 63 SEA ABB=ON PLU=ON L125 OR L128 OR L130 OR L131
 L133 407727 SEA ABB=ON PLU=ON REPROGR?/SC, SX
 L134 12 SEA ABB=ON PLU=ON L133 AND L132
 L135 10 SEA ABB=ON PLU=ON L113 AND L134
 L136 12 SEA ABB=ON PLU=ON L134 OR L135
 L137 160271 SEA ABB=ON PLU=ON DYE?/SC, SX
 L138 10 SEA ABB=ON PLU=ON L137 AND L132
 L139 31 SEA ABB=ON PLU=ON L137 AND L113
 L140 41 SEA ABB=ON PLU=ON L136 OR L138 OR L139
 L141 1 SEA ABB=ON PLU=ON L109 AND L102
 D SCAN
 L142 5 SEA ABB=ON PLU=ON L109 AND L107
 D SCAN
 L143 45 SEA ABB=ON PLU=ON (L138 OR L139 OR L140 OR L141 OR
 L142)
 D SCAN TI
 L144 16 SEA ABB=ON PLU=ON L143 AND L101
 L145 4 SEA ABB=ON PLU=ON L143 AND L47
 D SCAN
 L146 4 SEA ABB=ON PLU=ON L47 AND L113
 L147 3 SEA ABB=ON PLU=ON L47 AND L132
 L148 6 SEA ABB=ON PLU=ON (L145 OR L146 OR L147)
 D SCAN
 L149 41 SEA ABB=ON PLU=ON L143 NOT L148
 L150 8 SEA ABB=ON PLU=ON L149 AND L114
 L151 33 SEA ABB=ON PLU=ON L149 NOT L150
 D SCAN TI L151
 L152 6 SEA ABB=ON PLU=ON L128 OR L130 OR L131
 L153 5 SEA ABB=ON PLU=ON L113 AND (L126 OR L127)
 L154 6 SEA ABB=ON PLU=ON L152 OR L153
 L155 45 SEA ABB=ON PLU=ON L143 OR L154
 D L143 1-20 FHITSTR

=> => d que stat l150

L1 1 SEA FILE=HCAPLUS ABB=ON PLU=ON US20040009414/PN
 L5 586894 SEA FILE=REGISTRY ABB=ON PLU=ON (C(L)N(L)H)/ELS(L)3/E
 LC.SUB

L6 226508 SEA FILE=REGISTRY ABB=ON PLU=ON 1-14/C AND L5
 L7 196951 SEA FILE=REGISTRY ABB=ON PLU=ON L6 AND 1-4/N
 L8 8935 SEA FILE=REGISTRY ABB=ON PLU=ON L7 AND BICYCLO?
 L9 188016 SEA FILE=REGISTRY ABB=ON PLU=ON L7 NOT L8
 L10 125761 SEA FILE=REGISTRY ABB=ON PLU=ON L9 AND 1-2/N
 L11 65552 SEA FILE=REGISTRY ABB=ON PLU=ON L9 AND 3-4/N
 L14 26542 SEA FILE=HCAPLUS ABB=ON PLU=ON L8
 L17 32271 SEA FILE=HCAPLUS ABB=ON PLU=ON (PIGMENT? OR DYE?) (2A)
 ACID?
 L20 249 SEA FILE=HCAPLUS ABB=ON PLU=ON XANTHEN? AND L17
 L21 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 AND L14
 L22 7850 SEA FILE=HCAPLUS ABB=ON PLU=ON XANTHEN?
 L23 54 SEA FILE=HCAPLUS ABB=ON PLU=ON L22 (2A) L17
 L24 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L23 AND L14
 L25 2092 SEA FILE=REGISTRY ABB=ON PLU=ON L7 AND TRICYCL?
 L26 15595 SEA FILE=HCAPLUS ABB=ON PLU=ON L25
 L30 37530 SEA FILE=HCAPLUS ABB=ON PLU=ON ?PHTHALOCYANIN?
 L31 408 SEA FILE=HCAPLUS ABB=ON PLU=ON L30 (L) L17
 L33 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L31 AND L25
 L34 863950 SEA FILE=HCAPLUS ABB=ON PLU=ON L10
 L36 528 SEA FILE=HCAPLUS ABB=ON PLU=ON L34 (L) L17
 L37 4930 SEA FILE=HCAPLUS ABB=ON PLU=ON (AZO OR DIAZO OR
 MONOAZO OR (MONO OR DI) (W) AZO) (L) L17
 L38 8 SEA FILE=HCAPLUS ABB=ON PLU=ON (L23 OR L31 OR L36)
 AND L14
 L40 1 SEA FILE=HCAPLUS ABB=ON PLU=ON (L23 OR L31 OR L36)
 AND L26
 L42 217029 SEA FILE=HCAPLUS ABB=ON PLU=ON L11
 L45 981 SEA FILE=HCAPLUS ABB=ON PLU=ON L23 OR L31 OR L36
 L46 QUE ABB=ON PLU=ON MOIET? OR UNIT? OR GROUP? OR FUNC?
 OR FRAGMENT? OR PORTION? OR SUBSTITUENT?
 L47 37393 SEA FILE=HCAPLUS ABB=ON PLU=ON L46 (2A) ((SULFURIC OR
 SULFONIC OR CARBOXYLIC) (A) ACID? OR SO3H OR CO2H OR
 COOH)
 L48 4387 SEA FILE=HCAPLUS ABB=ON PLU=ON L47 (L) (PIGMENT OR
 DYE)
 L49 285 SEA FILE=HCAPLUS ABB=ON PLU=ON L47 (L) ((L22 OR L30 OR
 (AZO OR DIAZO OR MONOAZO OR (MONO OR DI)) (W) AZO))
 L50 1019985 SEA FILE=HCAPLUS ABB=ON PLU=ON L14 OR L26 OR L34 OR
 L42
 L51 582 SEA FILE=HCAPLUS ABB=ON PLU=ON L50 AND L45
 L52 QUE ABB=ON PLU=ON (CURE# OR CURING# OR CURAB? OR CRO
 SS (W) LINK? OR CROSSLINK? OR CATALY? OR HARDEN?)
 L53 57 SEA FILE=HCAPLUS ABB=ON PLU=ON L51 AND L52
 L54 13774 SEA FILE=HCAPLUS ABB=ON PLU=ON (COLOR? OR COLOUR?) (2A)
) FILTER?
 L55 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L53 AND L54
 L59 592 SEA FILE=HCAPLUS ABB=ON PLU=ON L54 AND L50
 L61 34 SEA FILE=HCAPLUS ABB=ON PLU=ON L59 AND L17
 L62 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L1 AND L61
 L63 728 SEA FILE=HCAPLUS ABB=ON PLU=ON L30 AND L17
 L64 1204 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 OR L63 OR L49
 L65 9 SEA FILE=HCAPLUS ABB=ON PLU=ON L64 AND L59
 L66 89 SEA FILE=REGISTRY ABB=ON PLU=ON ACID YELLOW?/CN
 L67 143 SEA FILE=REGISTRY ABB=ON PLU=ON ACID BLUE?/CN
 L68 178 SEA FILE=REGISTRY ABB=ON PLU=ON ACID RED?/CN

L70 8009 SEA FILE=HCAPLUS ABB=ON PLU=ON L66 OR YELLOW? (A) ACID?
 L71 6653 SEA FILE=HCAPLUS ABB=ON PLU=ON L67
 L72 8088 SEA FILE=HCAPLUS ABB=ON PLU=ON L71 OR BLUE? (A) ACID?
 L74 28798 SEA FILE=HCAPLUS ABB=ON PLU=ON L68 OR RED? (A) ACID?
 L75 38963 SEA FILE=HCAPLUS ABB=ON PLU=ON L70 OR L72 OR L74
 L76 4015 SEA FILE=HCAPLUS ABB=ON PLU=ON L75 AND L50
 L77 690 SEA FILE=HCAPLUS ABB=ON PLU=ON L76 AND L52
 L78 12 SEA FILE=HCAPLUS ABB=ON PLU=ON L77 AND L54
 L79 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L78 AND L1
 L80 16301 SEA FILE=HCAPLUS ABB=ON PLU=ON OXIDAT? (A) POTENTIAL?
 L81 2551 SEA FILE=HCAPLUS ABB=ON PLU=ON AG (A) AG
 L85 42271 SEA FILE=HCAPLUS ABB=ON PLU=ON L50 AND (DYE? OR
 PIGMENT?)
 L88 108 SEA FILE=HCAPLUS ABB=ON PLU=ON L85 AND L80
 L89 6 SEA FILE=HCAPLUS ABB=ON PLU=ON L85 AND L81
 L92 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L88 AND L17
 L93 13649 SEA FILE=HCAPLUS ABB=ON PLU=ON (PIGMENT? OR DYE?) (A) A
 CID?
 L94 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L88 AND L93
 L95 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L92 NOT L94
 L96 1 SEA FILE=REGISTRY ABB=ON PLU=ON 18389-95-2/RN
 L97 1 SEA FILE=REGISTRY ABB=ON PLU=ON 6415-12-9/RN
 L98 1 SEA FILE=REGISTRY ABB=ON PLU=ON 280-57-9/RN
 L99 28 SEA FILE=HCAPLUS ABB=ON PLU=ON L96
 L100 122 SEA FILE=HCAPLUS ABB=ON PLU=ON L97
 L101 5308 SEA FILE=HCAPLUS ABB=ON PLU=ON L98
 L102 18 SEA FILE=HCAPLUS ABB=ON PLU=ON L101 AND L17
 L103 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L1 AND L102
 L104 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L102 AND L52
 L105 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L17 AND L99
 L106 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L17 AND L100
 L107 49 SEA FILE=HCAPLUS ABB=ON PLU=ON ((L99 OR L100 OR
 L101)) AND (L93 OR L75 OR L48 OR L49 OR L37 OR L31 OR
 L20)
 L109 QUE ABB=ON PLU=ON CURE# OR CURING# OR CURAB? OR CROS
 S(W) LINK? OR CROSSLINK? OR HARDEN?
 L110 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L107 AND L109
 L111 29 SEA FILE=HCAPLUS ABB=ON PLU=ON L21 OR L24 OR L33 OR
 L38 OR L40 OR L55 OR L62 OR L65 OR L78 OR L79
 L112 51 SEA FILE=HCAPLUS ABB=ON PLU=ON L111 OR L89 OR L92 OR
 L94 OR L95 OR (L103 OR L104 OR L105 OR L106) OR L110
 L113 62 SEA FILE=HCAPLUS ABB=ON PLU=ON L112 OR L102
 L114 43371 SEA FILE=HCAPLUS ABB=ON PLU=ON (L22 OR L30 OR
 L49) (2A) L93 OR L48 OR L75
 L117 44 SEA FILE=HCAPLUS ABB=ON PLU=ON 116 AND L54
 L121 64751 SEA FILE=HCAPLUS ABB=ON PLU=ON (OXID? OR REDUC? OR
 REDOX) (A) POTENT?
 L123 9 SEA FILE=HCAPLUS ABB=ON PLU=ON L113 AND L121
 L124 6 SEA FILE=HCAPLUS ABB=ON PLU=ON L113 AND L81
 L125 59 SEA FILE=HCAPLUS ABB=ON PLU=ON L117 OR L123 OR L124
 L126 25680 SEA FILE=HCAPLUS ABB=ON PLU=ON LIQUID CRYSTAL
 DISPLAYS/CT
 L127 62800 SEA FILE=HCAPLUS ABB=ON PLU=ON LIQUID (3A) CRYSTAL (3A) D
 ISPLAY OR LCD OR L(W) C(W) D
 L128 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L126 AND L125

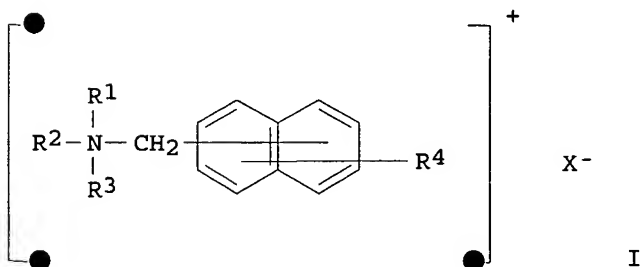
L130 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L113 AND L126
 L131 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L113 AND L127
 L132 63 SEA FILE=HCAPLUS ABB=ON PLU=ON L125 OR L128 OR L130
 OR L131
 L133 407727 SEA FILE=HCAPLUS ABB=ON PLU=ON REPROGR?/SC,SX
 L134 12 SEA FILE=HCAPLUS ABB=ON PLU=ON L133 AND L132
 L135 10 SEA FILE=HCAPLUS ABB=ON PLU=ON L113 AND L134
 L136 12 SEA FILE=HCAPLUS ABB=ON PLU=ON L134 OR L135
 L137 160271 SEA FILE=HCAPLUS ABB=ON PLU=ON DYE?/SC,SX
 L138 10 SEA FILE=HCAPLUS ABB=ON PLU=ON L137 AND L132
 L139 31 SEA FILE=HCAPLUS ABB=ON PLU=ON L137 AND L113
 L140 41 SEA FILE=HCAPLUS ABB=ON PLU=ON L136 OR L138 OR L139
 L141 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L109 AND L102
 L142 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L109 AND L107
 L143 45 SEA FILE=HCAPLUS ABB=ON PLU=ON (L138 OR L139 OR L140
 OR L141 OR L142)
 L145 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L143 AND L47
 L146 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L47 AND L113
 L147 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L47 AND L132
 L148 6 SEA FILE=HCAPLUS ABB=ON PLU=ON (L145 OR L146 OR
 L147)
 L149 41 SEA FILE=HCAPLUS ABB=ON PLU=ON L143 NOT L148
 L150 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L149 AND L114

=> d l150 cbib abs hitstr hitind

L150 ANSWER 1 OF 8 HCAPLUS COPYRIGHT 2005 ACS on STN

2004:931449 Document No. 141:396977 Quaternary
 naphthalenylmethyllummonium salts, their salt-forming dyes, and
 alcohol-thinned inks containing the dyes. Shioyama, Manabu
 (Orient Chemical Industries, Ltd., Japan). Jpn. Kokai Tokkyo Koho
 JP 2004307391 A2 20041104, 21 pp. (Japanese). CODEN: JKXXAF.
 APPLICATION: JP 2003-102953 20030407.

GI



AB The salts, useful for cation exchange of **acidic dyes**, are I (R1-R3 = C1-18 alkyl; R4 = H, alkyl, alkoxy, etc.; X = halo). The inks are useful for writing, ink-jet printing, and manufacture of **color filters**. Thus,

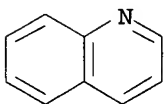
C.I. Acid Blue 113 (acidic diazo dye) was treated with tributyl-naphthalene-1-ylmethyammonium chloride to give a salt-forming dye. A marking pen ink containing the salt-forming dye, EtOH, and PhCH₂OH showed no viscosity increase after thermal shock test from -10° to 50° for 3 mo.

IT 91-22-5D, Quinoline, derivs.

RL: TEM (Technical or engineered material use); USES (Uses) (dyes, cation exchanged with quaternary naphthalenemethylammonium salts; quaternary naphthalenylmethyammonium salts as sources for cation exchanged acidic dyes for alc.-thinned inks)

RN 91-22-5 HCAPLUS

CN Quinoline (8CI, 9CI) (CA INDEX NAME)

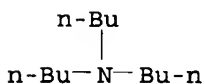


IT 102-82-9, Tributylamine

RL: RCT (Reactant); RACT (Reactant or reagent) (manufacture of quaternary naphthalenylmethyammonium salts as sources for cation exchanged acidic dyes for alc.-thinned inks)

RN 102-82-9 HCAPLUS

CN 1-Butanamine, N,N-dibutyl- (9CI) (CA INDEX NAME)

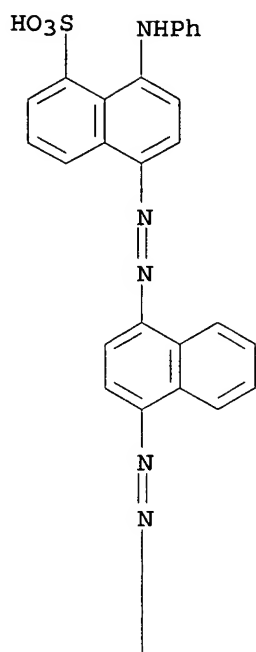


IT 3351-05-1DP, C.I. Acid Blue 113, reaction product with tributyl-naphthalenylmethyammonium chloride 4474-24-2DP, C.I. Acid Blue 80, reaction product with tributyl-naphthalenylmethyammonium chloride 6421-67-6DP, C.I. Acid Yellow 120, reaction product with trihexyl-naphthalenylmethyammonium chloride 70865-20-2DP, C.I. Acid Yellow 199, reaction product with tributyl-naphthalenylmethyammonium chloride
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (quaternary naphthalenylmethyammonium salts as sources for cation exchanged acidic dyes for alc.-thinned inks)

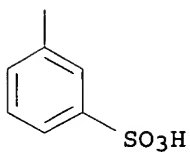
RN 3351-05-1 HCAPLUS

CN 1-Naphthalenesulfonic acid, 8-(phenylamino)-5-[[4-[(3-sulfophenyl)azo]-1-naphthalenyl]azo]-, disodium salt (9CI) (CA INDEX NAME)

PAGE 1-A

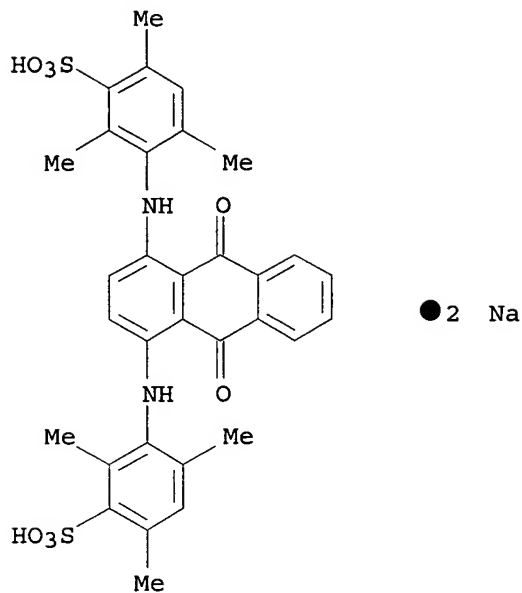


PAGE 2-A



● 2 Na

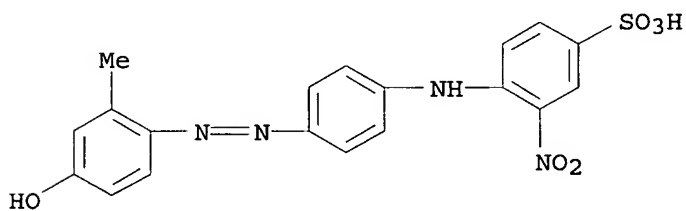
RN 4474-24-2 HCAPLUS
CN Benzenesulfonic acid, 3,3'-[(9,10-dihydro-9,10-dioxo-1,4-anthracenediyl)diimino]bis[2,4,6-trimethyl-, disodium salt (9CI)
(CA INDEX NAME)



RN 6421-67-6 HCAPLUS
 CN C.I. Acid Yellow 120 (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 70865-20-2 HCAPLUS
 CN Benzenesulfonic acid, 4-[[4-[(4-hydroxy-2-methylphenyl)azo]phenyl]amino]-3-nitro-, monosodium salt (9CI)
 (CA INDEX NAME)



● Na

IC ICM C07C211-63
 ICS B41J002-01; C09B069-04; C09D011-00; C09D011-16
 CC 42-12 (Coatings, Inks, and Related Products)
 Section cross-reference(s): 25, 41, 73, 74
 ST quaternary naphthalenylmethylammonium cation exchanged
 acidic dye; writing ink cation exchanged
 acidic dye; jet printing ink cation exchanged
 acidic dye; color filter ink

- cation exchanged **acidic dye**;
butylnaphthylmethylanmonium chloride cation exchanged azo dye;
marking ink cation exchanged azo dye
- IT Ketones, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(amino, dyes, cation exchanged with quaternary
naphthalenemethylanmonium salts; quaternary
naphthalenylmethylanmonium salts as sources for cation
exchanged **acidic dyes** for alc.-thinned
inks)
- IT Anthraquinone dyes
Azo dyes
(cation exchanged with quaternary naphthalenemethylanmonium
salts; quaternary naphthalenylmethylanmonium salts as sources
for cation exchanged **acidic dyes** for
alc.-thinned inks)
- IT Optical filters
(color, dyed with inks; quaternary
naphthalenylmethylanmonium salts as sources for cation
exchanged **acidic dyes** for alc.-thinned
inks)
- IT Inks
(jet-printing; quaternary naphthalenylmethylanmonium salts as
sources for cation exchanged **acidic dyes**
for alc.-thinned inks)
- IT Amines, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(keto, dyes, cation exchanged with quaternary
naphthalenemethylanmonium salts; quaternary
naphthalenylmethylanmonium salts as sources for cation
exchanged **acidic dyes** for alc.-thinned
inks)
- IT Inks
(marking; quaternary naphthalenylmethylanmonium salts as
sources for cation exchanged **acidic dyes**
for alc.-thinned inks)
- IT Spiro compounds
RL: TEM (Technical or engineered material use); USES (Uses)
(oxazines, dyes, cation exchanged with quaternary
naphthalenemethylanmonium salts; quaternary
naphthalenylmethylanmonium salts as sources for cation
exchanged **acidic dyes** for alc.-thinned
inks)
- IT Inks
(writing; quaternary naphthalenylmethylanmonium salts as
sources for cation exchanged **acidic dyes** .
for alc.-thinned inks)
- IT 91-22-5D, Quinoline, derivs. 92-83-1D, Xanthene
, derivs. 519-73-3D, Triphenylmethane, derivs.
RL: TEM (Technical or engineered material use); USES (Uses)
(dyes, cation exchanged with quaternary
naphthalenemethylanmonium salts; quaternary
naphthalenylmethylanmonium salts as sources for cation
exchanged **acidic dyes** for alc.-thinned
inks)
- IT 86-52-2, 1-(Chloromethyl)naphthalene 102-82-9,

- Tributylamine 102-86-3, Trihexylamine 1116-76-3, Trioctylamine
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (manufacture of quaternary naphthalenylmethylanmonium salts as
 sources for cation exchanged **acidic dyes**
 for alc.-thinned inks)
- IT 1930-17-2P 783341-86-6P 783341-87-7P
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP
 (Preparation); RACT (Reactant or reagent)
 (quaternary naphthalenylmethylanmonium salts as sources for
 cation exchanged **acidic dyes** for
 alc.-thinned inks)
- IT 1930-17-2DP, reaction products with **acidic dyes**
 3351-05-1DP, C.I. Acid Blue 113,
 reaction product with tributylnaphthalenylmethylanmonium chloride
 4403-90-1DP, C.I. Acid Green 25, reaction product with
 trioctylnaphthalenylmethylanmonium chloride 4474-24-2DP,
 C.I. Acid Blue 80, reaction product with
 tributylnaphthalenylmethylanmonium chloride 6421-67-6DP,
 C.I. Acid Yellow 120, reaction product with
 trihexylnaphthalenylmethylanmonium chloride 70865-20-2DP
 , C.I. Acid Yellow 199, reaction product with
 tributylnaphthalenylmethylanmonium chloride 783341-86-6DP,
 reaction product with diazo dye 783341-87-7DP, reaction product
 with anthraquinone dye
 RL: IMF (Industrial manufacture); TEM (Technical or engineered
 material use); PREP (Preparation); USES (Uses)
 (quaternary naphthalenylmethylanmonium salts as sources for
 cation exchanged **acidic dyes** for
 alc.-thinned inks)
- IT 64-17-5, Ethanol, uses 100-51-6, Benzyl alcohol, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (quaternary naphthalenylmethylanmonium salts as sources for
 cation exchanged **acidic dyes** for
 alc.-thinned inks)

=> d l150 2-8 cbib abs hitstr hitind

- L150 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2005 ACS on STN
 2004:330838 Document No. 140:365756 **Hardenable** composition
 containing anthrapyrimidine **acidic dye** or amine salt thereof,
color filter therefrom, and manufacture thereof.
 Suzuki, Nobuo (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai
 Tokkyo Koho JP 2004126193 A2 20040422, 28 pp. (Japanese). CODEN:
 JKXXAF. APPLICATION: JP 2002-289714 20021002.
- AB In the **hardenable** composition containing a binder and a dye, the
 dye is an anthrapyrimidine **acidic dye** or an amine salt thereof.
 The **color filter** is manufactured by applying the
hardenable composition on a support and effecting imagewise
 exposure through a photomask. The **color filter**
 used for a **liquid crystal display** and
 an optical imager exhibited little photo and thermal degradation
- IT 107-15-3D, 1,2-Diaminoethane, reaction product with
 anthrapyrimidine **acidic dye** 110-18-9D
 , reaction product with anthrapyrimidine **acidic**
dye 110-60-1D, 1,4-Diaminobutane, reaction

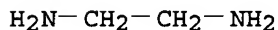
product with anthrapyrimidine **acidic dye**
 110-85-0D, Piperazine, reaction product with
 anthrapyrimidine **acidic dye** 123-75-1D
 , Pyrrolidine, reaction product with anthrapyrimidine
acidic dye 2611-80-5D, C.I.

Acid red 82, reaction product with amine
 4478-76-6D, C.I. Acid red 80, reaction
 product with amine

RL: DEV (Device component use); USES (Uses)
 (hardenable composition containing anthrapyrimidine
acidic dye or amine salt thereof for
color filter)

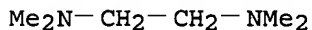
RN 107-15-3 HCAPLUS

CN 1,2-Ethanediamine (9CI) (CA INDEX NAME)



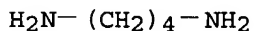
RN 110-18-9 HCAPLUS

CN 1,2-Ethanediamine, N,N,N',N'-tetramethyl- (9CI) (CA INDEX NAME)



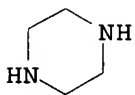
RN 110-60-1 HCAPLUS

CN 1,4-Butanediamine (8CI, 9CI) (CA INDEX NAME)



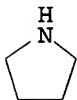
RN 110-85-0 HCAPLUS

CN Piperazine (8CI, 9CI) (CA INDEX NAME)



RN 123-75-1 HCAPLUS

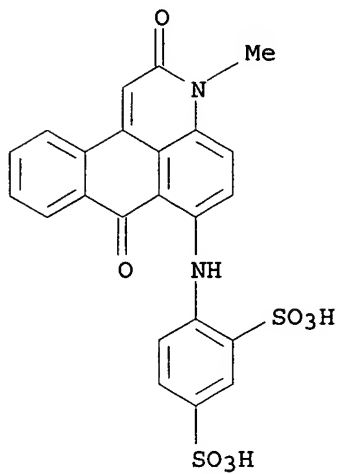
CN Pyrrolidine (8CI, 9CI) (CA INDEX NAME)



RN 2611-80-5 HCAPLUS

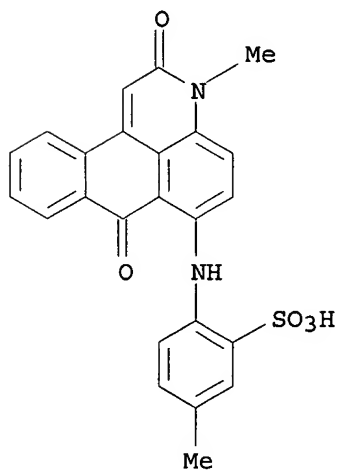
CN 1,3-Benzenedisulfonic acid, 4-[(2,7-dihydro-3-methyl-2,7-dioxo-3H-naphtho[1,2,3-de]quinolin-6-yl)amino]-, disodium salt (9CI) (CA

INDEX NAME)



● 2 Na

RN 4478-76-6 HCAPLUS
CN Benzenesulfonic acid, 2-[(2,7-dihydro-3-methyl-2,7-dioxo-3H-naphtho[1,2,3-de]quinolin-6-yl)amino]-5-methyl-, monosodium salt (9CI) (CA INDEX NAME)



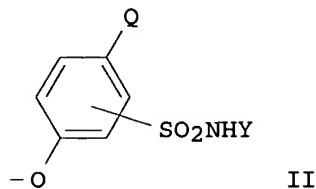
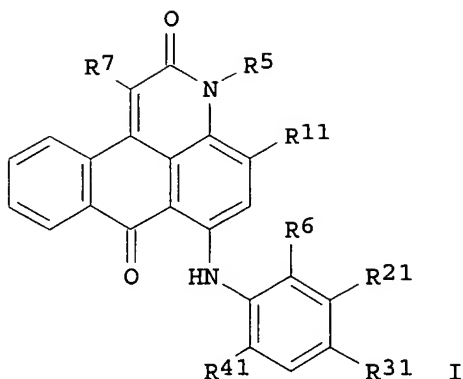
● Na

IC ICM G03F007-004

ICS C08K005-3437; C08L101-00; G02B005-20; G02B005-22
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
Section cross-reference(s): 41, 73
ST **hardenable compn anthrapyrimidine acidic dye amine salt;**
liq crystal display optical imager
color filter
IT **Liquid crystal displays**
Optical filters
Optical imaging devices
(**hardenable** composition containing anthrapyrimidine acidic dye
or amine salt thereof for **color filter**)
IT 107-15-3D, 1,2-Diaminoethane, reaction product with
anthrapyrimidine **acidic dye 110-18-9D**
, reaction product with anthrapyrimidine **acidic**
dye 110-60-1D, 1,4-Diaminobutane, reaction
product with anthrapyrimidine **acidic dye**
110-85-0D, Piperazine, reaction product with
anthrapyrimidine **acidic dye 123-75-1D**
, Pyrrolidine, reaction product with anthrapyrimidine
acidic dye 2611-80-5D, C.I.
Acid red 82, reaction product with amine
4478-76-6D, C.I. **Acid red 80**, reaction
product with amine 6846-33-9D, C.I. **Acid red**
81, reaction product with amine 6871-98-3D, C.I. **Acid**
red 83, reaction product with amine 11140-80-0D, C.I.
Acid Red 143, reaction product with amine
627874-04-8D, reaction product with anthrapyrimidine acidic dye
681465-37-2D, reaction product with anthrapyrimidine acidic dye
RL: DEV (Device component use); USES (Uses)
(**hardenable** composition containing anthrapyrimidine
acidic dye or amine salt thereof for
color filter)

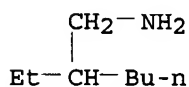
L150 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 2005 ACS on STN
2003:550273 Document No. 139:125202 Sulfonamide compounds, their
preparation, and their photopolymer compositions for magenta
color filter arrays. Ueda, Yuji; Machiguchi,
Kazuhiro; Endo, Hiroki; Uchida, Yoshinori (Sumitomo Chemical Co.,
Ltd., Japan; Sony Corp.). Jpn. Kokai Tokkyo Koho JP 2003201411 A2
20030718, 13 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
2002-2100 20020109.

GI

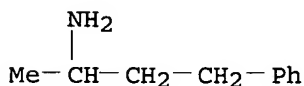


AB The sulfonamide compds., represented by general formula I [R11 = H, MeO, EtO, II; Q = Bu, BuO, pentyl, 1,1,3,3-tetramethylbutyl; Y = alkyl, cycloalkylalkyl, alkoxy, alkoxyalkyl, aryl; R21 = H, Me, Bu, SO2NH (Y = same as above); R31 = H, Cl, Me, Et, SO2NH; R41 = H, SO2NH; ≥1 of R11, R21, R31, and R41 is II or SO2NH; R5, R6 = H, Me; R7 = H, acetyl, benzoyl], are prepared by reacting sulfonyl halide compds. with primary amines YNH2 (Y = same as above), preferably in halogenated aliphatic hydrocarbon solvents in the presence of basic catalysts. The sulfonyl halide compds. are prepared by reacting anthrapyridone compds. with thionyl halides SOX2 (X = same as above), preferably in halogenated aliphatic hydrocarbon solvents in the presence of N,N-dialkylformamides. The photopolymer compns. containing I as colorants are patterned to give magenta color filter arrays having good heat resistance.

IT 104-75-6, 2-Ethylhexylamine 22374-89-6,
3-Amino-1-phenylbutane
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of sulfonamide compds. and their photopolymer compns. for magenta color filter arrays)
RN 104-75-6 HCAPLUS
CN 1-Hexanamine, 2-ethyl- (9CI) (CA INDEX NAME)



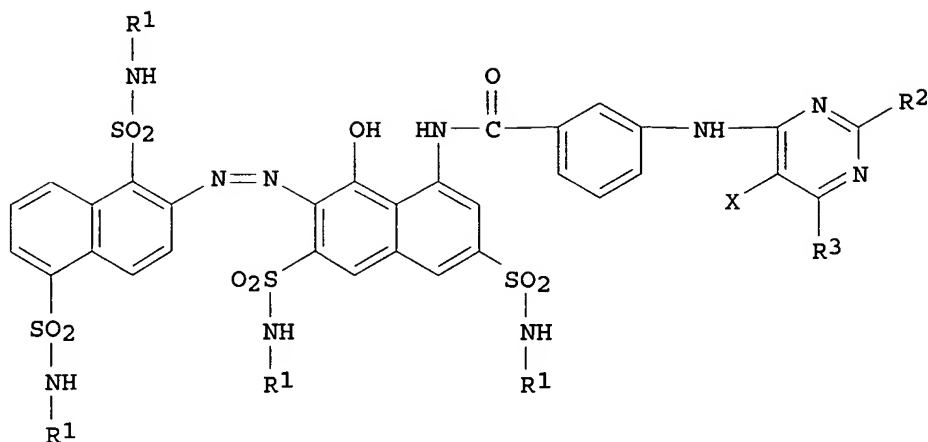
RN 22374-89-6 HCAPLUS
CN Benzenepropanamine, α-methyl- (9CI) (CA INDEX NAME)



IC ICM C09B005-14
ICS C07D221-18; G02B005-20; G02B005-22; C07B061-00
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
Section cross-reference(s): 25, 38, 41
ST sulfonamide prepn photopolymer magenta color
filter; anthrapyridone thionyl halide reaction sulfonamide
prepn
IT Phenolic resins, preparation
RL: IMF (Industrial manufacture); TEM (Technical or engineered
material use); PREP (Preparation); USES (Uses)
(novolak; preparation of sulfonamide compds. and their photopolymer
compns. for magenta color filter arrays)
IT Optical filters
(preparation of sulfonamide compds. and their photopolymer compns.
for magenta color filter arrays)
IT 108-78-1, Melamine, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(hardener; preparation of sulfonamide compds. and their
photopolymer compns. for magenta color filter
arrays)
IT 26505-28-2D, o-naphthoquinoneazide-5-sulfonate 160778-56-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(photosensitizer; preparation of sulfonamide compds. and their
photopolymer compns. for magenta color filter
arrays)
IT 27029-76-1P, m-Cresol-p-cresol-formaldehyde copolymer
561319-04-8P 561323-52-2P
RL: IMF (Industrial manufacture); TEM (Technical or engineered
material use); PREP (Preparation); USES (Uses)
(preparation of sulfonamide compds. and their photopolymer compns.
for magenta color filter arrays)
IT 104-75-6, 2-Ethylhexylamine 11140-80-0, C.I.
Acid Red 143 22374-89-6,
3-Amino-1-phenylbutane 561319-02-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of sulfonamide compds. and their photopolymer compns.
for magenta color filter arrays)
IT 68-12-2, N,N-Dimethylformamide, reactions
RL: RGT (Reagent); RACT (Reactant or reagent)
(preparation of sulfonamide compds. and their photopolymer compns.
for magenta color filter arrays)

L150 ANSWER 4 OF 8 HCAPLUS COPYRIGHT 2005 ACS on STN
2003:548940 Document No. 139:108781 Sulfoneamide compounds, their
preparation, and their color photopolymer compositions for magenta
color filter arrays. Ueda, Yuji; Machiguchi,
Kazuhiro; Uchida, Yoshinori; Endo, Hiroki (Sumitomo Chemical Co.,
Ltd., Japan; Sony Corp.). Jpn. Kokai Tokkyo Koho JP 2003201413 A2
20030718, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
2002-3181 20020110.

GI



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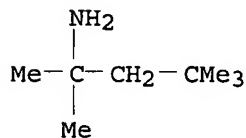
AB The sulfoneamide compds., represented by a general formula I (R_1 = alkyl, cyclohexylalkyl, alkoxy, alkoxyalkyl, aryl, aralkyl; R_2 , R_3 = halogen, OH; X = halogen), is prepared by reacting sulfone halide compds. bearing SO_2Y on the naphthalene rings with primary amines R_1NH_2 (R_1 = same as in I) to replace the SO_2Y to SO_2NHR_1 . The sulfone halide compds. are prepared by reacting sulfonyl compds. whose free acids bear SO_3H with halogenated thionyl compds. SO_2Y (Y = same as above) in the presence of N,N-dialkylformamides to replace the SO_3H to SO_2NHR_1 . The color photopolymer compns. containing I at high concentration are patterned to give magenta color filter layers showing good spectral properties.

IT 107-45-9, 1,1,3,3-Tetramethylbutylamine 22374-89-6
, 3-Amino-1-phenylbutane

RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of sulfoneamide compds. and their color photopolymer compns. for magenta color filter arrays)

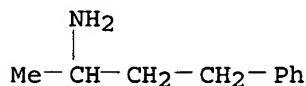
RN 107-45-9 HCAPLUS

CN 2-Pentanamine, 2,4,4-trimethyl- (9CI) (CA INDEX NAME)



RN 22374-89-6 HCAPLUS

CN Benzenepropanamine, α -methyl- (9CI) (CA INDEX NAME)



IC ICM C09B043-32
ICS C07D239-42; C09B029-28; G02B005-20; G02B005-22

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
Section cross-reference(s): 25, 41

ST sulfoneamide compd prepn **color filter** array;
photopolymer compn sulfoneamide magenta **color filter**

IT Phenolic resins, preparation
RL: IMF (Industrial manufacture); TEM (Technical or engineered
material use); PREP (Preparation); USES (Uses)
(novolak; preparation of sulfoneamide compds. and their color
photopolymer compns. for magenta **color filter**
arrays)

IT Optical filters
(preparation of sulfoneamide compds. and their color photopolymer
compns. for magenta **color filter** arrays)

IT 73817-38-6, Sandolan Milling Red K 4BL
RL: RCT (Reactant); RACT (Reactant or reagent)
(C.I. Acid Red 147, Sandolan Milling Red K
4BL; preparation of sulfoneamide compds. and their color
photopolymer compns. for magenta **color filter**
arrays)

IT 108-78-1, Melamine, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(**hardener**; preparation of sulfoneamide compds. and their
color photopolymer compns. for magenta **color filter**
arrays)

IT 26505-28-2D, o-naphthoquinonediazide-5-sulfonate derivs.
561054-95-3
RL: CAT (Catalyst use); USES (Uses)
(photosensitizer; preparation of sulfoneamide compds. and their
color photopolymer compns. for magenta **color filter**
arrays)

IT 561054-92-0P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP
(Preparation); RACT (Reactant or reagent)
(preparation of sulfoneamide compds. and their color photopolymer
compns. for magenta **color filter** arrays)

IT 561054-93-1P 561054-94-2P
RL: IMF (Industrial manufacture); TEM (Technical or engineered
material use); PREP (Preparation); USES (Uses)
(preparation of sulfoneamide compds. and their color photopolymer
compns. for magenta **color filter** arrays)

IT 107-45-9, 1,1,3,3-Tetramethylbutylamine 22374-89-6
, 3-Amino-1-phenylbutane 561063-62-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of sulfoneamide compds. and their color photopolymer
compns. for magenta **color filter** arrays)

IT 68-12-2, N,N-Dimethylformamide, reactions
RL: RGT (Reagent); RACT (Reactant or reagent)
(preparation of sulfoneamide compds. and their color photopolymer
compns. for magenta **color filter** arrays)

IT 24979-74-6, Maruka Lyncur CST 70
RL: TEM (Technical or engineered material use); USES (Uses)

(preparation of sulfoneamide compds. and their color photopolymer compns. for magenta color filter arrays)

L150 ANSWER 5 OF 8 HCAPLUS COPYRIGHT 2005 ACS on STN

2002:87850 Document No. 136:341024 Photopolymerization reactions`

initiated by a visible light photoinitiating system:

dye/amine/bis(trichloromethyl)-substituted-1,3,5-triazine.

Grotzinger, Caroline; Burget, Dominique; Jacques, Patrice;

Fouassier, Jean P. (Departement de Photochimie Generale, UMR CNRS

no 7525, Ecole Nationale Supérieure de Chimie, Mulhouse, 68093,

Fr.). Macromolecular Chemistry and Physics, 202(18), 3513-3522

(English) 2001. CODEN: MCHPES. ISSN: 1022-1352. Publisher:

Wiley-VCH Verlag GmbH.

AB Addition of a bis(trichloromethyl)-substituted-1,3,5-triazine (Tz) to a dye/amine photoinitiating system leads clearly to an increased efficiency of polymerization under visible light irradiation. The polymerization rates obtained with three triazine derivs. with either phenosafranine, eosin or Rose Bengal as light absorbing species, were measured. Whatever the investigated dye/amine mixture, the addition of Tz led to a strong synergistic effect: the inhibition time decreased and the polymerization rate increased significantly when the three components were used jointly. The spectroscopic and redox properties of the Tz were measured. The system dye/amine/Tz was investigated through time-resolved laser spectroscopy and steady state fluorescence expts. A detailed reaction mechanism was elaborated which shows that Tz acts mainly as an inhibitor scavenger. The involved inhibitor is the reduced dye (DH.) arising from the first photochem. reaction between the excited states of the dye and the amine.

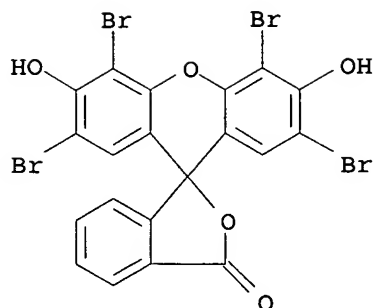
IT 17372-87-1, Eosin Y

RL: CAT (Catalyst use); CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)

(photopolymer. reactions initiated by a visible light photoinitiating system: dye/amine/bis(trichloromethyl)-substituted-1,3,5-triazine)

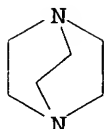
RN 17372-87-1 HCAPLUS

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 2',4',5',7'-tetrabromo-3',6'-dihydroxy-, disodium salt (9CI) (CA INDEX NAME)



●2 Na

IT 280-57-9, DABCO
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
 (photopolymn. reactions initiated by a visible light
 photoinitiating system: dye/amine/bis(trichloromethyl)-
 substituted-1,3,5-triazine)
 RN 280-57-9 HCAPLUS
 CN 1,4-Diazabicyclo[2.2.2]octane (8CI, 9CI) (CA INDEX NAME)



CC 35-3 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 37, 42, 73
 ST bistrichloromethyl substituted triazine dye amine photoinitiator
 radical polymn synergism; inhibitor scavenger bistrichloromethyl
 substituted triazine photochem polymn crosslinking
 acrylate
 IT 81-93-6, Phenosafranine 632-69-9, Rose Bengal disodium salt
 3584-23-4 6542-67-2, 2,4,6-Tris(trichloromethyl)-1,3,5-triazine
 17372-87-1, Eosin Y 69432-40-2
 RL: CAT (Catalyst use); CPS (Chemical process); PEP (Physical,
 engineering or chemical process); PRP (Properties); PYP (Physical
 process); PROC (Process); USES (Uses)
 (photopolymn. reactions initiated by a visible light
 photoinitiating system: dye/amine/bis(trichloromethyl)-
 substituted-1,3,5-triazine)
 IT 102-70-5, Triallylamine 103-01-5, N-Phenylglycine 105-59-9,
 N-Methyldiethanolamine 121-44-8, Triethylamine, processes
 121-69-7, Dimethylaniline, processes 280-57-9, DABCO
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical
 process); PYP (Physical process); PROC (Process)
 (photopolymn. reactions initiated by a visible light

photoinitiating system: dye/amine/bis(trichloromethyl)-
substituted-1,3,5-triazine)

L150 ANSWER 6 OF 8 HCAPLUS COPYRIGHT 2005 ACS on STN

2000:584202 Document No. 133:288678 Photolysis of quaternary ammonium dithiocarbamates and their use as photobase generators. Tachi, Hideki; Shirai, Masamitsu; Tsunooka, Masahiro (Department of Applied Chemistry, Graduate school of Engineering, Osaka Prefecture University, Osaka, 599-8531, Japan). Journal of Photopolymer Science and Technology, 13(1), 153-156 (English) 2000. CODEN: JSTEEW. ISSN: 0914-9244. Publisher: Technical Association of Photopolymers, Japan.

AB The photolysis of quaternary ammonium (QA) salts was studied along with their use as photobase generators. The photolysis of QA salts containing dithiocarbamate anion resulted in the formation of diazabicyclooctane (TEDA) and corresponding dithiocarbamate derivs. Quaternary ammonium dithiocarbamates were the most effective photo- and thermal **crosslinkers** of poly(glycidyl methacrylate) films in comparison with quaternary ammonium bromide or tetraphenylborate.

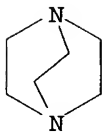
IT 280-57-9, TEDA

RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)

(photolysis of quaternary ammonium salts and their use as photobase generators and as photo- and thermal **crosslinkers**)

RN 280-57-9 HCAPLUS

CN 1,4-Diazabicyclo[2.2.2]octane (8CI, 9CI) (CA INDEX NAME)



CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST photobase generator quaternary ammonium salt dithiocarbamate photocrosslinking thermal **crosslinking**; photolysis quaternary ammonium dithiocarbamate tertiary amine photogeneration

IT Photolysis

(UV; photolysis of quaternary ammonium salts and their use as photobase generators and as photo- and thermal **crosslinkers**)

IT UV and visible spectra

(absorption; photolysis of quaternary ammonium salts and their use as photobase generators and as photo- and thermal **crosslinkers**)

IT Crosslinking agents

(photochem.; photolysis of quaternary ammonium salts and their use as photobase generators and as photo- and thermal **crosslinkers**)

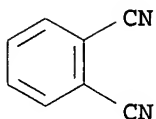
IT Quaternary ammonium compounds, reactions

RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)

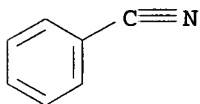
- (photolysis of quaternary ammonium salts and their use as photobase generators and as photo- and thermal crosslinkers)
- IT Photoimaging materials
Photoresists
(photolysis of quaternary ammonium salts and their use as photobase generators and as photo- and thermal crosslinkers in relation to)
- IT Amines, formation (nonpreparative)
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(tertiary; photolysis of quaternary ammonium salts and their use as photobase generators and as photo- and thermal crosslinkers)
- IT Crosslinking agents
(thermal; photolysis of quaternary ammonium salts and their use as photobase generators and as photo- and thermal crosslinkers)
- IT 143-74-8, Phenol red
RL: NUU (Other use, unclassified); USES (Uses)
(acid-base indicator; photolysis of quaternary ammonium salts and their use as photobase generators and as photo- and thermal crosslinkers)
- IT 23839-34-1, Phenacyl N,N-dimethyldithiocarbamate 119492-02-3
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(photolysis of quaternary ammonium salts and their use as photobase generators and as photo- and thermal crosslinkers)
- IT 280-57-9, TEDA
RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)
(photolysis of quaternary ammonium salts and their use as photobase generators and as photo- and thermal crosslinkers)
- IT 97301-06-9 299931-63-8 299931-64-9 299931-65-0
RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(photolysis of quaternary ammonium salts and their use as photobase generators and as photo- and thermal crosslinkers)
- L150 ANSWER 7 OF 8 HCAPLUS COPYRIGHT 2005 ACS on STN
2000:129546 Document No. 132:167672 Pigments and color pastes for manufacture of color filters of liquid crystal display devices. Yamashita, Tetsuo; Akamatsu, Takayoshi (Toray Industries, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2000056123 A2 20000225, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-221546 19980805.
- AB The pastes contain binder resins and phthalocyanine-type pigments which had been purified so that the amount of contaminants in which is at <10 ppm for improving color stability and preventing further crystallization of pigments. The contaminants are cyanobenzene, 1,2-dicyanobenzene, cyanophenyltriazole, di(2-cyanophenyl)triazole, and cyanobenzene bearing C(=NH)NH₂

group on o-position. The suppression of the compds. can be done by repeatedly extracting the crude pigments with a solvent, e.g., Et formate.

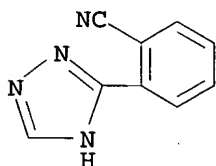
IT 91-15-6, 1,2-Dicyanobenzene 100-47-0,
Cyanobenzene, processes 20062-40-2 258880-79-4
RL: REM (Removal or disposal); PROC (Process)
(impurity; purification of pigments for manufacture of color
filters of liquid crystal
display devices)
RN 91-15-6 HCAPLUS
CN 1,2-Benzenedicarbonitrile (9CI) (CA INDEX NAME)



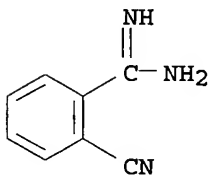
RN 100-47-0 HCAPLUS
CN Benzonitrile (8CI, 9CI) (CA INDEX NAME)



RN 20062-40-2 HCAPLUS
CN Benzonitrile, 2-(1H-1,2,4-triazol-3-yl)- (9CI) (CA INDEX NAME)



RN 258880-79-4 HCAPLUS
CN Benzenecarboximidamide, 2-cyano- (9CI) (CA INDEX NAME)



IC ICM G02B005-20
ICS C09B067-20; C09B067-54; G02B005-22; G02F001-1335; G03F007-004
CC 41-7 (Dyes, Organic Pigments, Fluorescent Brighteners,

and Photographic Sensitizers)
 Section cross-reference(s): 76

ST color filter manuf pigment contaminant redn

IT Polyimides, properties
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (aromatic; pigments and color pastes for manufacture of color filters of liquid crystal display devices)

IT Pigments, nonbiological
 (pigments and color pastes for manufacture of color filters of liquid crystal display devices)

IT Polyamic acids
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (pigments and color pastes for manufacture of color filters of liquid crystal display devices)

IT Liquid crystal displays
 Optical filters
 (purification of pigments for manufacture of color filters of liquid crystal display devices)

IT 85-44-9D, Phthalic anhydride, reaction products with polyamic acid 108-31-6D, Maleic anhydride, reaction products with polyamic acid 84329-59-9 210049-57-3D, 3,3',4,4'-Biphenyltetracarboxylic dianhydride-bis(3-aminopropyl)tetramethyldisiloxane-3,3'-diaminodiphenylsulfone-p-phenylenediamine copolymer, terminated with maleic anhydride
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (color pastes; pigments and color pastes for manufacture of color filters of liquid crystal display devices)

IT 117-79-3DP, 2-Aminoanthraquinone, reaction products with polyamic acid 187941-81-7DP, Bis(3-aminopropyl)tetramethyldisiloxane-3,3'-diaminodiphenylsulfone-3,3',4,4'-diphenyl sulfone tetracarboxylic dianhydride-pyromellitic dianhydride copolymer, reaction products with aminoanthraquinone 232278-27-2DP, reaction products with phthalic anhydride
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)
 (dispersant; pigments and color pastes for manufacture of color filters of liquid crystal display devices)

IT 96-48-0, γ -Butyrolactone 109-94-4, Ethyl formate
 RL: NUU (Other use, unclassified); USES (Uses)
 (extraction solvent; purification of pigments for manufacture of color filters of liquid crystal display devices)

IT 91-15-6, 1,2-Dicyanobenzene 100-47-0, Cyanobenzene, processes 20062-40-2 258880-79-4 258880-80-7
 RL: REM (Removal or disposal); PROC (Process)
 (impurity; purification of pigments for manufacture of color

filters of liquid crystal
display devices)

IT 574-93-6P, Phthalocyanine

RL: PRP (Properties); PUR (Purification or recovery); TEM
(Technical or engineered material use); PREP (Preparation); USES
(Uses)

(pigments and color pastes for manufacture of color
filters of liquid crystal
display devices)

IT 14302-13-7P, Pigment Green 36

RL: PRP (Properties); PUR (Purification or recovery); TEM
(Technical or engineered material use); PREP (Preparation); USES
(Uses)

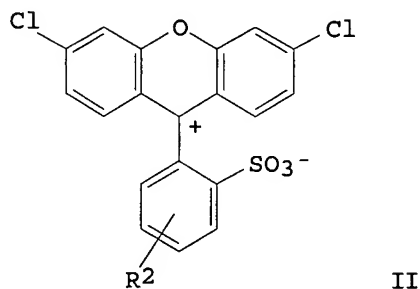
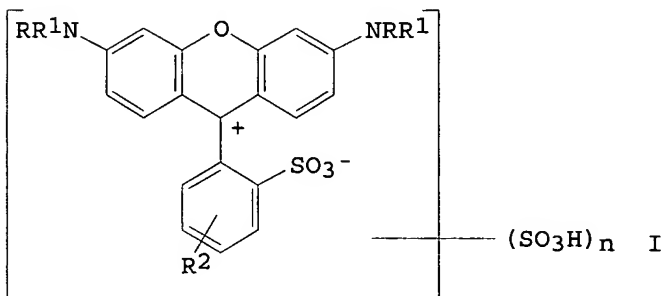
(purification of pigments for manufacture of color
filters of liquid crystal
display devices)

L150 ANSWER 8 OF 8 HCAPLUS COPYRIGHT 2005 ACS on STN

1976:510104 Document No. 85:110104 Xanthene dyes.

Haehnke, Manfred; Kohlhaas, Folker; Meininger, Fritz; Papenfuhs,
Theodor (Hoechst A.-G., Fed. Rep. Ger.). Ger. Offen. DE 2460491
19760701, 34 pp. (German). CODEN: GWXXBX. APPLICATION: DE
1974-2460491 19741220.

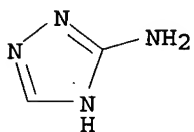
GI



AB Xanthene acid dyes (I, R = H, alkyl,
aryl; R¹ = alkyl, aryl, heterocyclic group; R² = halo, alkoxy,
carboxyl, sulfo; n = 0, 1, 2) with excellent fastness, especially on

wool, were prepared in high yield and purity by reaction of II (R2 as defined) with a stoichiometric amount of RR1NH in a polar organic solvent containing an inorg. base or an amine as HCl acceptor, followed optionally, by sulfonation. One hundred twenty-four dyes are reported.

IT 61-82-5
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with dichloroxanthene derivative)
 RN 61-82-5 HCAPLUS
 CN 1H-1,2,4-Triazol-3-amine (9CI) (CA INDEX NAME)



IC C09B011-28
 CC 40-6 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)
 Section cross-reference(s): 27
 ST xanthene acid dye wool; polyamide fiber dye
 IT 60-09-3 61-82-5 63-74-1 64-04-0 82-45-1 87-59-2
 87-62-7 90-04-0 95-03-4 95-51-2 95-53-4 95-55-6
 95-64-7 95-68-1 95-69-2 95-78-3 98-16-8 98-42-0
 99-09-2 99-98-9 100-01-6 100-46-9 100-61-8 101-54-2
 103-69-5 103-84-4 104-94-9 106-47-8 106-49-0 108-18-9
 108-42-9 108-44-1 121-47-1 122-80-5 123-30-8 132-32-1
 134-32-7 136-95-8 139-59-3 156-43-4 536-90-3 591-27-5
 615-65-6 623-08-5 934-22-5 934-32-7 1075-76-9 1126-78-9
 1747-60-0 2216-68-4 2735-04-8 2835-68-9 5246-58-2
 5400-75-9 6373-50-8 6967-12-0 7019-01-4 7425-81-2
 13952-84-6 14575-59-8 16889-21-7 18076-61-4 19056-34-9
 21418-32-6 28491-52-3 29242-84-0 30273-39-3 37846-06-3
 41608-77-9 41687-14-3
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with dichloroxanthene derivative)

=> => d que stat 1148

L1 1 SEA FILE=HCAPLUS ABB=ON PLU=ON US20040009414/PN
 L5 586894 SEA FILE=REGISTRY ABB=ON PLU=ON (C(L)N(L)H)/ELS(L)3/E
 LC.SUB
 L6 226508 SEA FILE=REGISTRY ABB=ON PLU=ON 1-14/C AND L5
 L7 196951 SEA FILE=REGISTRY ABB=ON PLU=ON L6 AND 1-4/N
 L8 8935 SEA FILE=REGISTRY ABB=ON PLU=ON L7 AND BICYCLO?
 L9 188016 SEA FILE=REGISTRY ABB=ON PLU=ON L7 NOT L8
 L10 125761 SEA FILE=REGISTRY ABB=ON PLU=ON L9 AND 1-2/N
 L11 65552 SEA FILE=REGISTRY ABB=ON PLU=ON L9 AND 3-4/N
 L14 26542 SEA FILE=HCAPLUS ABB=ON PLU=ON L8
 L17 32271 SEA FILE=HCAPLUS ABB=ON PLU=ON (PIGMENT? OR DYE?) (2A)
 ACID?

L20 249 SEA FILE=HCAPLUS ABB=ON PLU=ON XANTHEN? AND L17
 L21 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 AND L14
 L22 7850 SEA FILE=HCAPLUS ABB=ON PLU=ON XANTHEN?
 L23 54 SEA FILE=HCAPLUS ABB=ON PLU=ON L22 (2A) L17
 L24 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L23 AND L14
 L25 2092 SEA FILE=REGISTRY ABB=ON PLU=ON L7 AND TRICYCL?
 L26 15595 SEA FILE=HCAPLUS ABB=ON PLU=ON L25
 L30 37530 SEA FILE=HCAPLUS ABB=ON PLU=ON ?PHTHALOCYANIN?
 L31 408 SEA FILE=HCAPLUS ABB=ON PLU=ON L30 (L) L17
 L33 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L31 AND L25
 L34 863950 SEA FILE=HCAPLUS ABB=ON PLU=ON L10
 L36 528 SEA FILE=HCAPLUS ABB=ON PLU=ON L34 (L) L17
 L37 4930 SEA FILE=HCAPLUS ABB=ON PLU=ON (AZO OR DIAZO OR
 MONOAZO OR (MONO OR DI) (W) AZO) (L) L17
 L38 8 SEA FILE=HCAPLUS ABB=ON PLU=ON (L23 OR L31 OR L36)
 AND L14
 L40 1 SEA FILE=HCAPLUS ABB=ON PLU=ON (L23 OR L31 OR L36)
 AND L26
 L42 217029 SEA FILE=HCAPLUS ABB=ON PLU=ON L11
 L45 981 SEA FILE=HCAPLUS ABB=ON PLU=ON L23 OR L31 OR L36
 L46 QUE ABB=ON PLU=ON MOIET? OR UNIT? OR GROUP? OR FUNC?
 OR FRAGMENT? OR PORTION? OR SUBSTITUENT?
 L47 37393 SEA FILE=HCAPLUS ABB=ON PLU=ON L46 (2A) ((SULFURIC OR
 SULFONIC OR CARBOXYLIC) (A) ACID? OR SO3H OR CO2H OR
 COOH)
 L48 4387 SEA FILE=HCAPLUS ABB=ON PLU=ON L47 (L) (PIGMENT OR
 DYE)
 L49 285 SEA FILE=HCAPLUS ABB=ON PLU=ON L47 (L) ((L22 OR L30 OR
 (AZO OR DIAZO OR MONOAZO OR (MONO OR DI) (W) AZO))
 L50 1019985 SEA FILE=HCAPLUS ABB=ON PLU=ON L14 OR L26 OR L34 OR
 L42
 L51 582 SEA FILE=HCAPLUS ABB=ON PLU=ON L50 AND L45
 L52 QUE ABB=ON PLU=ON (CURE# OR CURING# OR CURAB? OR CRO
 SS (W) LINK? OR CROSSLINK? OR CATALY? OR HARDEN?)
 L53 57 SEA FILE=HCAPLUS ABB=ON PLU=ON L51 AND L52
 L54 13774 SEA FILE=HCAPLUS ABB=ON PLU=ON (COLOR? OR COLOUR?) (2A
) FILTER?
 L55 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L53 AND L54
 L59 592 SEA FILE=HCAPLUS ABB=ON PLU=ON L54 AND L50
 L61 34 SEA FILE=HCAPLUS ABB=ON PLU=ON L59 AND L17
 L62 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L1 AND L61
 L63 728 SEA FILE=HCAPLUS ABB=ON PLU=ON L30 AND L17
 L64 1204 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 OR L63 OR L49
 L65 9 SEA FILE=HCAPLUS ABB=ON PLU=ON L64 AND L59
 L66 89 SEA FILE=REGISTRY ABB=ON PLU=ON ACID YELLOW?/CN
 L67 143 SEA FILE=REGISTRY ABB=ON PLU=ON ACID BLUE?/CN
 L68 178 SEA FILE=REGISTRY ABB=ON PLU=ON ACID RED?/CN
 L70 8009 SEA FILE=HCAPLUS ABB=ON PLU=ON L66 OR YELLOW? (A) ACID?

 L71 6653 SEA FILE=HCAPLUS ABB=ON PLU=ON L67
 L72 8088 SEA FILE=HCAPLUS ABB=ON PLU=ON L71 OR BLUE? (A) ACID?
 L74 28798 SEA FILE=HCAPLUS ABB=ON PLU=ON L68 OR RED? (A) ACID?
 L75 38963 SEA FILE=HCAPLUS ABB=ON PLU=ON L70 OR L72 OR L74
 L76 4015 SEA FILE=HCAPLUS ABB=ON PLU=ON L75 AND L50
 L77 690 SEA FILE=HCAPLUS ABB=ON PLU=ON L76 AND L52
 L78 12 SEA FILE=HCAPLUS ABB=ON PLU=ON L77 AND L54

L79 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L78 AND L1
 L80 16301 SEA FILE=HCAPLUS ABB=ON PLU=ON OXIDAT? (A) POTENTIAL?
 L81 2551 SEA FILE=HCAPLUS ABB=ON PLU=ON AG (A) AG
 L85 42271 SEA FILE=HCAPLUS ABB=ON PLU=ON L50 AND (DYE? OR
 PIGMENT?)
 L88 108 SEA FILE=HCAPLUS ABB=ON PLU=ON L85 AND L80
 L89 6 SEA FILE=HCAPLUS ABB=ON PLU=ON L85 AND L81
 L92 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L88 AND L17
 L93 13649 SEA FILE=HCAPLUS ABB=ON PLU=ON (PIGMENT? OR DYE?) (A) A
 CID?
 L94 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L88 AND L93
 L95 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L92 NOT L94
 L96 1 SEA FILE=REGISTRY ABB=ON PLU=ON 18389-95-2/RN
 L97 1 SEA FILE=REGISTRY ABB=ON PLU=ON 6415-12-9/RN
 L98 1 SEA FILE=REGISTRY ABB=ON PLU=ON 280-57-9/RN
 L99 28 SEA FILE=HCAPLUS ABB=ON PLU=ON L96
 L100 122 SEA FILE=HCAPLUS ABB=ON PLU=ON L97
 L101 5308 SEA FILE=HCAPLUS ABB=ON PLU=ON L98
 L102 18 SEA FILE=HCAPLUS ABB=ON PLU=ON L101 AND L17
 L103 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L1 AND L102
 L104 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L102 AND L52
 L105 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L17 AND L99
 L106 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L17 AND L100
 L107 49 SEA FILE=HCAPLUS ABB=ON PLU=ON ((L99 OR L100 OR
 L101)) AND (L93 OR L75 OR L48 OR L49 OR L37 OR L31 OR
 L20)
 L109 QUE ABB=ON PLU=ON CURE# OR CURING# OR CURAB? OR CROS
 S(W) LINK? OR CROSSLINK? OR HARDEN?
 L110 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L107 AND L109
 L111 29 SEA FILE=HCAPLUS ABB=ON PLU=ON L21 OR L24 OR L33 OR
 L38 OR L40 OR L55 OR L62 OR L65 OR L78 OR L79
 L112 51 SEA FILE=HCAPLUS ABB=ON PLU=ON L111 OR L89 OR L92 OR
 L94 OR L95 OR (L103 OR L104 OR L105 OR L106) OR L110
 L113 62 SEA FILE=HCAPLUS ABB=ON PLU=ON L112 OR L102
 L117 44 SEA FILE=HCAPLUS ABB=ON PLU=ON 116 AND L54
 L121 64751 SEA FILE=HCAPLUS ABB=ON PLU=ON (OXID? OR REDUC? OR
 REDOX) (A) POTENT?
 L123 9 SEA FILE=HCAPLUS ABB=ON PLU=ON L113 AND L121
 L124 6 SEA FILE=HCAPLUS ABB=ON PLU=ON L113 AND L81
 L125 59 SEA FILE=HCAPLUS ABB=ON PLU=ON L117 OR L123 OR L124
 L126 25680 SEA FILE=HCAPLUS ABB=ON PLU=ON LIQUID CRYSTAL
 DISPLAYS/CT
 L127 62800 SEA FILE=HCAPLUS ABB=ON PLU=ON LIQUID (3A) CRYSTAL (3A) D
 ISPLAY OR LCD OR L(W) C(W) D
 L128 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L126 AND L125
 L130 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L113 AND L126
 L131 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L113 AND L127
 L132 63 SEA FILE=HCAPLUS ABB=ON PLU=ON L125 OR L128 OR L130
 OR L131
 L133 407727 SEA FILE=HCAPLUS ABB=ON PLU=ON REPROGR?/SC, SX
 L134 12 SEA FILE=HCAPLUS ABB=ON PLU=ON L133 AND L132
 L135 10 SEA FILE=HCAPLUS ABB=ON PLU=ON L113 AND L134
 L136 12 SEA FILE=HCAPLUS ABB=ON PLU=ON L134 OR L135
 L137 160271 SEA FILE=HCAPLUS ABB=ON PLU=ON DYE?/SC, SX
 L138 10 SEA FILE=HCAPLUS ABB=ON PLU=ON L137 AND L132
 L139 31 SEA FILE=HCAPLUS ABB=ON PLU=ON L137 AND L113

L140 41 SEA FILE=HCAPLUS ABB=ON PLU=ON L136 OR L138 OR L139
 L141 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L109 AND L102
 L142 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L109 AND L107
 L143 45 SEA FILE=HCAPLUS ABB=ON PLU=ON (L138 OR L139 OR L140
 OR L141 OR L142)
 L145 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L143 AND L47
 L146 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L47 AND L113
 L147 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L47 AND L132
 L148 6 SEA FILE=HCAPLUS ABB=ON PLU=ON (L145 OR L146 OR
 L147)

=> => d l148 1-6 cbib abs hitstr hitind

L148 ANSWER 1 OF 6 HCAPLUS COPYRIGHT 2005 ACS on STN

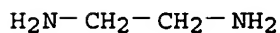
2004:39678 Document No. 140:119941 Dye-containing **curable**
 composition, **color filter** and method of
 manufacturing the same. Araki, Katsumi (Fuji Photo Film Co.,
 Ltd., Japan). U.S. Pat. Appl. Publ. US 2004009414 A1 20040115, 19
 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-606185
 20030626. PRIORITY: JP 2002-189678 20020628; JP 2003-39376
 20030218.

AB The invention relates to a **dye-containing curable**
 composition which contains a binder and an organic solvent soluble
dye, and in which the organic solvent soluble **dye** is a
 compound represented by the following general formula **Dye**
 $\cdot X_n$, and a **color filter** formed by using
 this compound. In the general formula, **Dye** represents an
acidic dye portion having a
sulfonic acid group or a
carboxylic acid group; X represents a
 portion derived from at least one of a nitrogen-containing compound with
 a mol. weight of 250 or less having carbon, hydrogen, and two or more
 nitrogen atoms, and an aliphatic cyclic amine compound with a mol. weight
 of 250 or less having carbon, hydrogen and one or more nitrogen
 atoms; and n represents a value that satisfies $0 < n \leq 5$. X_n
 General formula. The **color filter** is suitable
 for use in optical imaging devices such as LCD, CCD
 camera.

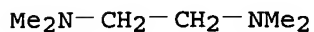
IT 107-15-3, 1,2-Ethanediamine, uses 110-18-9,
 N,N,N',N'-Tetramethyldiaminoethane 110-70-3,
 N,N'-Dimethyldiaminoethane 110-85-0, Piperazine, uses
 123-75-1, Pyrrolidine, uses 280-57-9,
 1,4-Diazabicyclo[2.2.2]octane 6375-55-9, Acid
 yellow 42 6408-78-2, Acid Blue
 25 6415-12-9, Tetramethylhydrazine 18389-95-2,
 1,1'-Bipyrrolidine
 RL: TEM (Technical or engineered material use); USES (Uses)
 (Dye-containing **curable** composition, **color**
filter and method of manufacturing the same)

RN 107-15-3 HCAPLUS

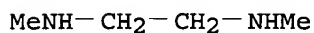
CN 1,2-Ethanediamine (9CI) (CA INDEX NAME)



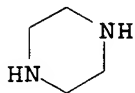
RN 110-18-9 HCAPLUS
CN 1,2-Ethanediamine, N,N,N',N'-tetramethyl- (9CI) (CA INDEX NAME)



RN 110-70-3 HCAPLUS
CN 1,2-Ethanediamine, N,N'-dimethyl- (9CI) (CA INDEX NAME)



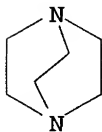
RN 110-85-0 HCAPLUS
CN Piperazine (8CI, 9CI) (CA INDEX NAME)



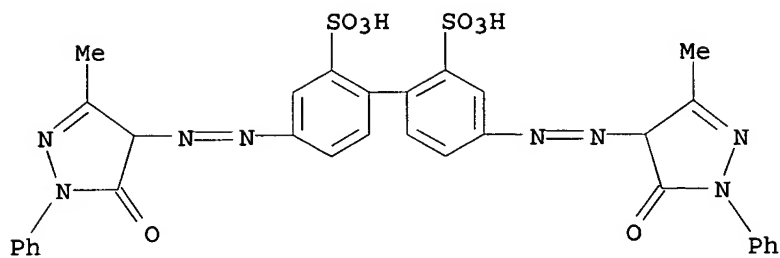
RN 123-75-1 HCAPLUS
CN Pyrrolidine (8CI, 9CI) (CA INDEX NAME)



RN 280-57-9 HCAPLUS
CN 1,4-Diazabicyclo[2.2.2]octane (8CI, 9CI) (CA INDEX NAME)

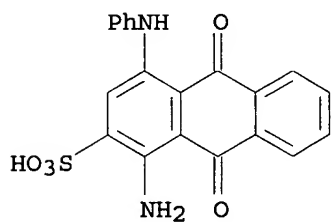


RN 6375-55-9 HCAPLUS
CN [1,1'-Biphenyl]-2,2'-disulfonic acid, 4,4'-bis[(4,5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl)azo]-, disodium salt (9CI)
(CA INDEX NAME)



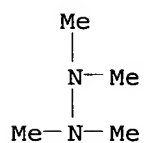
● 2 Na

RN 6408-78-2 HCAPLUS
 CN 2-Anthracenesulfonic acid, 1-amino-9,10-dihydro-9,10-dioxo-4-(phenylamino)-, monosodium salt (9CI) (CA INDEX NAME)

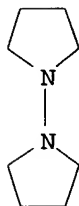


● Na

RN 6415-12-9 HCAPLUS
 CN Hydrazine, tetramethyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 18389-95-2 HCAPLUS
 CN 1,1'-Bipyrrolidine (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

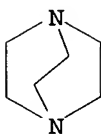


IC ICM G02F001-1335
ICS G02B005-20; G03F007-008; G03F007-016
INCL 430007000; 430154000; 430281100
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and
Other **Reprographic** Processes)
Section cross-reference(s): 41
ST dye compn color filter manufg
IT Dyes
Optical filters
Optical imaging devices
(Dye-containing **curable** composition, color
filter and method of manufacturing the same)
IT 107-15-3, 1,2-Ethanediamine, uses 110-18-9,
N,N,N',N'-Tetramethyldiaminoethane 110-70-3,
N,N'-Dimethyldiaminoethane 110-85-0, Piperazine, uses
123-75-1, Pyrrolidine, uses 280-57-9,
1,4-Diazabicyclo[2.2.2]octane 6375-55-9, Acid
yellow 42 6408-78-2, Acid Blue
25 6415-12-9, Tetramethylhydrazine 12217-34-4, C.I.
Acid Red 57 12220-75-6, C.I. Acid
yellow 112 12220-78-9, C.I. Acid
yellow 143 12239-17-7, C.I. Acid
yellow 111 12239-18-8, C.I. Acid
yellow 116 18389-95-2,
1,1'-Bipyrrolidine 61901-51-7, C.I. Acid
yellow 114
RL: TEM (Technical or engineered material use); USES (Uses)
(Dye-containing **curable** composition, color
filter and method of manufacturing the same)

L148 ANSWER 2 OF 6 HCAPLUS COPYRIGHT 2005 ACS on STN
2003:255116 Document No. 138:256639 Textured thermosetting
weatherable powder coatings. Hart, Stephen C.; Schmierer, Jeffrey
G.; Carlson, Brian W. (H. B. Fuller Licensing & Financing Inc.,
USA). U.S. US 6541544 B1 20030401, 8 pp. (English). CODEN:
USXXAM. APPLICATION: US 2000-579759 20000526.
AB Title coating composition applicable to a temperature-sensitive substrate by
electrostatic spray or fluidized bed and **curable** at low
temperature to form a textured surface to hide irregularities on the
surface of the underlying substrate without texturing agent, is
composed of a **curing** agent capable of reacting with an
acid or anhydride functional group, a polymeric coreactant with
≥2 functional groups reacting with the **curing**
agent, which is prepared by polymerizing an ethylenically unsatd. monomer
and ethylenically unsatd. monomer with ≥1 carboxyl acid

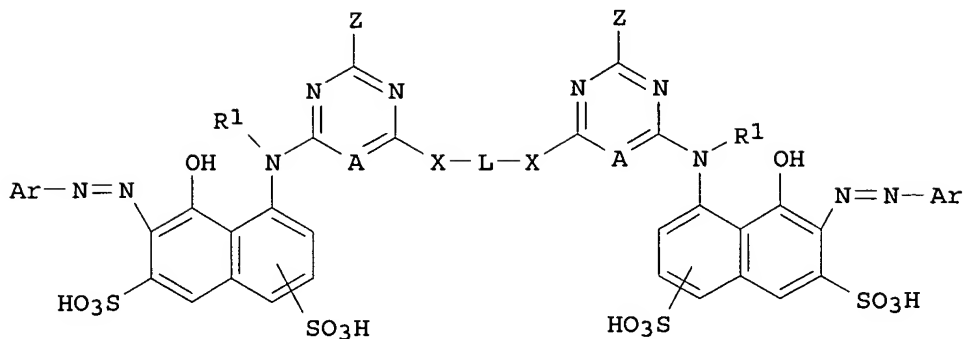
functional group or ethylenically unsatd. monomer with anhydride functional group, carboxylic acid functional polyester with acid number of 20-80 and Tg of 30-85°, and, optionally, catalyst selected from imidazoles, imidazolines, tert-amines, and etc. Thus, carboxy-containing polyester resin (Uralac P5700) 70, carboxy-containing acrylic resin (SCX 848) 30, diglycidyl isocyanate (PT 810) 16.7, and pigment 30 parts were mixed to give a powder coating, which was then coated on substrate and cured at 400°F for 10 and 30 min.

IT 280-57-9, 1,4-Diaza-[2,2,2]-bicyclooctane
 RL: CAT (Catalyst use); USES (Uses)
 (textured thermosetting weatherable powder coatings)
 RN 280-57-9 HCAPLUS
 CN 1,4-Diazabicyclo[2.2.2]octane (8CI, 9CI) (CA INDEX NAME)



IC ICM C08L033-02
 INCL 523410000; 523409000; 523412000; 525107000; 525111000; 525119000
 CC 42-7 (Coatings, Inks, and Related Products)
 ST carboxy polyester textured thermosetting weatherable powder coating; acid anhydride acrylic resin diglycidyl isocyanate curing agent coating
 IT Crosslinking agents
 (textured thermosetting weatherable powder coatings)
 IT 280-57-9, 1,4-Diaza-[2,2,2]-bicyclooctane 288-32-4,
 Imidazole, uses 670-96-2, 2-Phenylimidazole 693-98-1D,
 2-Methyl imidazole, salts 1119-97-7, Mytab 28299-33-4,
 Imidazoline 50995-95-4, 2-Propylimidazole 201467-54-1
 201467-55-2 502632-79-3 502632-80-6 502632-81-7
 RL: CAT (Catalyst use); USES (Uses)
 (textured thermosetting weatherable powder coatings)
 L148 ANSWER 3 OF 6 HCAPLUS COPYRIGHT 2005 ACS on STN
 2001:332186 Document No. 134:312422 Ink jet dyes based on two
 aliphatically linked (7-(ortho-carboxyarylaz)-8-
 hydroxydisulfonaphthylamino)-(dia/tria)ziny units. Wight, Paul;
 Stocks, Julie Ann (Avecia Limited, UK). Brit. UK Pat. Appl. GB
 2353533 A1 20010228, 29 pp. (English). CODEN: BAXXDU.
 APPLICATION: GB 2000-15905 20000629. PRIORITY: GB 1999-16110
 19990710.

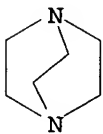
GI



I

AB Ink jet dyes I were synthesized, where A = N, C-Cl, C-CN or C-NO₂; Ar = a substituted aryl group carrying a COOH group ortho to the azo group; L = aliphatical group carrying a COOH, SO₃H or PO₃H₂ group; Z = SR₂, OR₃, NR₄R₅ or a labile atom or group; X = S, O or NR₁; R₁ = H or optionally substituted alkyl; and R₂-5 = H, optionally substituted alkyl, aryl or aralkyl; or R₄ and R₅ together with the nitrogen to which they are attached form an optionally substituted 5- or 6-membered ring. The dyes were formulated into inks by dissolving in a liquid medium of water and mixts. of water-miscible organic solvents such as C1-6-alkanols, linear and cyclic amides, ketones, ketone-alcs., diols, triols, oligo- and polyalkylene glycols, mono-C1-4-alkyl ethers of diols and cyclic esters. When jet printed onto paper, the inks provided prints with a bright magenta shade, high water-fastness and good light fastness.

IT 280-57-9, 1,4-Diazabicyclo[2,2,2]octane
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (Ink jet dyes based on two aliphatically linked
 (7-(ortho-carboxyarylazo)-8-hydroxydisulfonaphth-2-ylamino)-
 (dia/tria)ziny units)
 RN 280-57-9 HCAPLUS
 CN 1,4-Diazabicyclo[2.2.2]octane (8CI, 9CI) (CA INDEX NAME)



IC ICM C09B043-40
 ICS C09D011-02
 CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners,
 and Photographic Sensitizers)
 Section cross-reference(s): 42
 IT 70-54-2, Lysine 108-77-0, Cyanuric chloride 118-92-3,

Anthranilic acid 134-34-9, Acetyl H-acid
 280-57-9, 1,4-Diazabicyclo[2,2,2]octane 923-32-0,
 Cystine 929-06-6 7632-00-0, Sodium nitrite
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (Ink jet **dyes** based on two aliphatically linked
 (7-(ortho-carboxyarylazo)-8-hydroxydisulfonaphth-2-ylamino)-
 (dia/tria)ziny units)

L148 ANSWER 4 OF 6 HCAPLUS COPYRIGHT 2005 ACS on STN

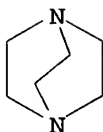
1992:492334 Document No. 117:92334 Two-package ambient-temperature-
 curing acrylic coating composition. Elmore, Jim D.;
 Babcock, Donald E.; DeGooyer, William J. (Hi-Tek Polymers, Inc.,
 USA). Eur. Pat. Appl. EP 483974 A1 19920506, 12 pp. DESIGNATED
 STATES: R: AT, BE, CH, DE, DK, FR, GB, IT, LI, LU, NL, SE.
 (English). CODEN: EPXXDW. APPLICATION: EP 1991-308964 19910930.
 PRIORITY: US 1990-590778 19901001.

AB Ambient-temperature-curing coating compns. with pot life
 ≥ 8 h and cure time ≤ 24 h contain a
 copolymer derived from ethylenically unsatd. monomers and bearing
 pendant acetoacetoxyalkyl ester groups and pendant glycidyl ester
 groups and AlR₁R₂R₃ (R₁ = alkoxide, R₂ = chelate group having an
 acetoacetoxy moiety, R₃ = alkoxide or acetoacetoxy chelate group)
 catalyst in one package and a copolymer derived from ethylenically
 unsatd. monomers and bearing pendant **carboxylic**
acid groups attached directly to the backbone
 and through an (poly)ester side chain and a strong organic base
 catalyst. Thus, a solution containing Me methacrylate (I) 141, styrene
 141, Bu acrylate (II) 174, lactone-modified hydroxyethyl
 methacrylate (average caprolactone unit content 1.5/mol.) 50,
 hydroxyethyl methacrylate 27, methacrylic acid 100, Zonyl (fluoro
 methacrylate containing average 8 C/perfluorocarbon chain) 4.5, and
 dicumyl peroxide was polymerized in 273 parts Et 3-ethoxypropionate,
 treated with vacuum at elevated temperature to remove solvent, cooled,
 mixed with 86 parts hexahydrophthalic anhydride and 300 parts
 BuOAc, and heated 43 min at 95-105° to give a 68.3% solution
 Two parts mixture containing this solution 2.39, triethylenediamine 1.39,
 25% MeOH-Me₄NOH solution 5.56, **pigment** grind 80.51, and
 fluorocarbon acid 0.15 parts was mixed with 1 part mixture containing
 60% mineral spirit solution of 195:105:195:105:151.7
 acetoacetoxyethyl methacrylate (III)-II-glycidyl
 methacrylate-I-styrene copolymer 54.01, bisphenol A diglycidyl
 ether (epoxide equivalent 190) 3.7, hydrogenated m-xylenediamine
 tetraepoxide (epoxide equivalent 105) 1.85, MeCOPr 35.65, hexyl
 acetate 0.8, and Al complex (iso-PROH 1, Et acetoacetate 1, III 4
 parts to give a paint with useful pot life 22 h and gel 10 days,
 which was applied to a steel panel to give a 1 mil coating that
 exhibited pencil hardness 3B and HB and MEK double-rub value >17
 and >100 after 3 and 30 days, resp.

IT 280-57-9, 1,4-Diazabicyclo[2.2.2]octane
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, latent, for crosslinking 2-package
 room-temperature-curable coatings containing
 epoxy-acetoacetoxyalkyl acrylic polymers and acidic acrylic
 polymers)

RN 280-57-9 HCAPLUS

CN 1,4-Diazabicyclo[2.2.2]octane (8CI, 9CI) (CA INDEX NAME)



IC ICM C09D133-06
ICS C08K005-00

CC 42-7 (Coatings, Inks, and Related Products)

ST two package acrylic coating; room temp curing acrylic coating; acetoacetoxyethyl methacrylate copolymer coating; glycidyl methacrylate copolymer coating; acrylate copolymer coating; styrene acrylic coating; caprolactone hydroxyethyl methacrylate copolymer coating; fluorohydrocarbyl methacrylate copolymer coating; methacrylic acid copolymer copolymer coating; aluminum complex crosslinking catalyst coating; hydrogenated xylenediamine epoxide acrylic coating; bisphenol glycidyl ether acrylic coating; hydrophthalic anhydride acrylic coating; methylammonium hydroxide crosslinking catalyst coating; triethylenediamine crosslinking catalyst coating; isopropoxyaluminum crosslinking catalyst coating; latent crosslinking catalyst acrylic coating

IT Crosslinking catalysts
(latent, aluminum complexes and strong organic bases, for 2-package room-temperature-curable coatings containing acetoacetoxyalkyl-epoxy acrylic polymers and acidic acrylic polymers)

IT Coating materials
(room-temperature-curable, 2-package, containing acetoacetoxyalkyl-epoxy acrylic polymers and acidic acrylic polymers, with good pot life)

IT 67-63-0D, 2-Propanol, complexes with aluminum and acetoacetoxy group-containing compds. 75-59-2, Tetramethylammonium hydroxide 141-97-9D, Ethyl acetoacetate, complexes with aluminum and isopropanol and acetoacetoxyethyl methacrylate 280-57-9, 1,4-Diazabicyclo[2.2.2]octane 7429-90-5D, Aluminum, alkoxide chelate complexes 21282-97-3D, complexes with aluminum and isopropanol and Et acetoacetate
RL: CAT (Catalyst use); USES (Uses)
(catalysts, latent, for crosslinking 2-package room-temperature-curable coatings containing epoxy-acetoacetoxyalkyl acrylic polymers and acidic acrylic polymers)

IT 1477-55-0D, 1,3-Benzenedimethanamine, hydrogenated, epoxidized 25085-99-8, Bisphenol A diglycidyl ether homopolymer
RL: USES (Uses)
(coatings containing epoxy-acetoacetoxyalkyl acrylic polymers and acidic acrylic polymers and, 2-package room-temperature-curable, with good pot life)

IT 142875-47-6P
RL: PREP (Preparation)
(manufacture of, for room-temperature-curable 2-package coating compns. containing acidic acrylic polymers with good pot life)

IT 143067-29-2P 143067-30-5P

RL: PREP (Preparation)

(manufacture of, for room-temperature-curable 2-package coating compns. containing epoxy-acetoacetoxyalkyl acrylic polymers with good pot life)

L148 ANSWER 5 OF 6 HCAPLUS COPYRIGHT 2005 ACS on STN

1965:82557 Document No. 62:82557 Original Reference No.

62:14673d-h,14674a-h,14675a-c Phenazines. VI. Synthesis of 2-aminophenazine- and 2-aminocarboxyphenazinesulfonamides.

Herbert, R. B.; Holliman, F. G. (Univ. Leeds, UK). Tetrahedron, 21(3), 663-75 (English) 1965. CODEN: TETRAB. ISSN: 0040-4020.

OTHER SOURCES: CASREACT 62:82557.

GI For diagram(s), see printed CA Issue.

AB cf. CA 60, 6841d, 10678c. Oxidative cyclization of the appropriate aminodiphenylamines, ArAr'NH (I) in boiling PhNO₂ yielded R, R₁, R₂ -substituted 2-aminophenazines (II). The known 2,4-(O₂N)₂C₆H₃NHC₆H₄SO₂NH₂-p (500 mg.) hydrogenated 16 hrs. in 50 ml. alc. at 20°/4 atmospheric over 100 mg. PtO₂ and the colorless solution filtered into 50 ml. PhNO₂, the residue washed with 100 ml. hot PhNO₂ and the combined solns. freed from alc., refluxed 36 hrs. and the solution concentrated yielded 46% II (R = 8-NH₂, R₁ = H, R₂ = 2-SO₂NH₂) (III). Since the SO₂NH₂ group in III was in conjugation with N-10, a corresponding compound with N-5 conjugation was synthesized. H₂O₂ (60 ml., 30%) stirred with 11.5 g. 3,4-Br(H₂N)C₆H₃SO₂NH₂ in 200 ml. AcOH and 4 ml. concentrated H₂SO₄ and kept 2 hrs. at 70-80° yielded 40% 2,2'-dibromoazoxybenzene,4,4'-disulfonamide, m. 286° (decomposition) (C₆H₅N). The mother liquor evaporated in vacuo and diluted with H₂O yielded 3,4-Br(O₂N)C₆H₃SO₂NH₂, m. 136-8° (PhMe), triturated (3.25 g.) with 1.8 g. p-H₂NC₆H₄NHAc and 1.5 g. KOAc and the mixture fused 3.5 hrs. at 130-5°, extracted into N NaOH and the decolorized (C) solution acidified with concentrated HCl yielded 48% 4,3-O₂N(p-AcNHC₆H₄NH)C₆H₃SO₂NH₂, m. 132-4°, hydrolyzed in 2.5N HCl to the corresponding 4,3-O₂N(p-H₂NC₆H₄NH)C₆H₃SO₂NH₂ (IV), m. 235-6°, hydrogenated to the diamino compound, 4,3-H₂N(p-H₂NC₆H₄NH)C₆H₃SO₂NH₂, characterized as the diacetyl derivative, m. 140-2°. IV (500 mg.) hydrogenated and the alc. solution filtered into 150 ml. PhNO₂, combined with alc. washings and the alc. evaporated, the PhNO₂ solution refluxed 24 hrs. and the filtered solution concentrated yielded 44% II (R = 7-NH₂, R₁ = H, R₂ = 2-SO₂NH₂) (V), m. 287-9°. In both above syntheses, small amts. of 2-aminophenazine were isolated in addition to III and V. In contrast, an attempt to synthesize II (R = 3-NH₂, R₁ = H, R₂ = 2-SO₂NH₂) by cyclization of 4,6,3-(H₂N)2-(PhNH)C₆H₂SO₂NH₂ was frustrated by elimination of the SO₂-NH₂ group with formation only of 2-aminophenazine. Na₂SO₃ (10.7 g.) in 200 ml. H₂O added in 30 min. with rapid stirring to 20 g. 5,2,4-Cl(O₂N)₂C₆H₂Cl in 400 ml. alc. under reflux and the mixture refluxed 2 hrs. with stirring, the filtered solution evaporated and the residue recrystd. from H₂O yielded 65% 2,4,5-(O₂N)₂(Na-O₃S)C₆H₂Cl (VI), m. >300°, refluxed (900 mg.) with 300 mg. PhNH₂ and 370 mg. NaOAc in 40 ml. 95% alc. 4 hrs. and the residue on evaporation recrystd. from alc. to give I.2H₂O [Ar = Ph, Ar' = 2,4,5-(O₂N)₂(NaO₃S)C₆H₂]. 3,4,6-Cl(O₂N)₂C₆H₂SO₂Cl, m. 116.5-17.5°, shaken vigorously (510 mg.) 7 min. in 25 ml. aqueous

NH₄OH (d. 0.88) and filtered from 18 mg. 3,4,6-Cl(O₂N)₂C₆H₂NH₂, m. 175-6°, the orange filtrate evaporated in vacuo and the residue crystallized from alc. yielded 57% 3,4,6-Cl(O₂N)₂C₆H₂SO₂NH₂. The sulfonamide (500 mg.), 400 mg. PhNH₂, and 230 mg. NaOAc in 15 ml. alc. refluxed 7 hrs. and the filtered dark red solution cooled yielded 52% I [Ar = Ph, Ar' = 4,6,3-(O₂N)₂-(H₂NO₂S)C₆H₂] (VII), m. 216-18° (alc.). VII hydrogenated and the product acetylated gave I [Ar = Ph, Ar' = 4,6,3-(Ac-NH)₂(H₂NO₂S)C₆H₂], m. 219-19.5°. VII (140 mg.) hydrogenated and the product refluxed in PhNO₂ 24 hrs. and chromatographed on Al₂O₃, the column washed with C₆H₆ and the orange band eluted with 1:9 Me₂CO-Et₂O gave 2-aminophenazine. The PhNO₂ oxidative cyclization was also successful in the synthesis of 4 selected representatives of the 42 possible 2-amino-carboxyphenazinesulfonamides. The selection was made on the basis of the suggested positions of the CO₂H and SONH₂ groups in aeruginosin B which behaves similarly to 2-amino- and 2-aminocarboxyphenazinesulfonamides when heated in dilute acid solution p-H₂NC₆H₄SO₂NH₂ (1.72 g.), 2.91 g. 2,3,5-Br(O₂N)₂-C₆H₂CO₂H, and 1.64 g. NaOAc refluxed 1 hr. in 30 ml. alc. with stirring and the precipitated yellow Na salt taken up in H₂O, acidified with dilute HCl and the precipitate recrystd. from aqueous alc. yielded 63% I [Ar = 2,4,6-HO₂C(O₂N)₂C₆H₂, Ar' = p-C₆H₄SO₂NH₂] (VIII), m. 275-6°, which (500 mg.) was hydrogenated in 50 ml. absolute alc. 24 hrs. at 20°/4 atmospheric over 500 mg. PtO₂, filtered, and the filtrate and alc. washings evaporated (N atmospheric) in vacuo to give the corresponding I [Ar = 2,4,6-HO₂C(H₂N)₂C₆H₂, Ar' = p-C₆H₄SO₂-NH₂], decomposing on heating. VIII (500 mg.) hydrogenated and the filtered solution and 150 ml. PhNO₂ washings combined, the alc. evaporated and the mixture refluxed 48 hrs., filtered and the filtrate concentrated in vacuo (0.1 mm.) gave 54% amorphous II (R = 8-NH₂, R₁ = 6-CO₂H, R₂ = 2-SO₂NH₂), m. >330°. A similar synthesis employing o-H₂NC₆H₄SO₂NH₂ led to II (R = 7-NH₂, R₁ = 9-CO₂H, R₂ = 1-SO₂NH₂) (IX) via I [Ar = 2,4,6-HO₂C(O₂N)₂-C₆H₂, Ar' = 2-H₂NSO₂C₆H₄] (X). NaOAc (2.05 g.), 1.72 g. o-H₂NC₆H₄SO₂NH₂, and 2.91 g. 2,3,5-Br(O₂N)₂C₆H₂CO₂H refluxed 12 hrs. in AmOH with stirring and the yellow salt taken up in hot H₂O, the solution boiled and the cold filtered solution acidified with HCl yielded 40% X, m. 220-2°. X (390 mg.) hydrogenated and the diamino compound oxidatively cyclized 44 hrs. in refluxing PhNO₂ yielded 120 mg. IX, m. >330°. The mother liquors extracted into 2N NaOH and the Et₂O-washed, decolorized (C), and filtered extract acidified with AcOH yielded 4% 3-aminophenazine-1-carboxylic acid. II (R = 3-NH₂, R₁ = 9-CO₂Me, R₂ = 1-SO₂-NH₂) (XI) was prepared from I [Ar = 2-HO₂CC₆H₄, Ar' = 4,6,2-(O₂N)₂(H₂NO₂S)C₆H₂] (XII). ClSO₃H (50 ml.) stirred 3 hrs. at 93° with 10 g. dry 2,3,5-Cl(O₂N)₂C₆H₂SO₃Na and the cooled mixture poured onto ice yielded 55% 2,3,5-Cl(O₂N)₂C₆H₂SO₂Cl, m. 104-6° (ligroine, b. 100-20°), converted by shaking with excess aqueous NH₄OH to yield 84% 2,3,5-Cl(O₂N)₂C₆H₂SO₂NH₂, m. 198-209°. The crude sulfonamide (3.9 g.), 1.9 g. o-H₂NC₆H₄-CO₂H, and 2.9 g. NaOAc refluxed 4 hrs. in 100 ml. alc. with stirring and the red-orange Na salt taken up in warm H₂O, acidified with concentrated HCl, and the free acid (2.45 g.) recrystd. from 95% alc. gave XII, m. 287-8°. XII (206 mg.) in 20 ml. alc. hydrogenated 24 hrs. at 20°/4 atmospheric over 206 mg. PtO₂ and filtered, the residue extracted with hot alc. and the

combined filtrate and washings evaporated (N atmospheric) in vacuo gave I [Ar = 2-HO₂CC₂H₄, Ar' = 4,6,2-(H₂N)₂(H₂NO₂S)C₆H₂], m. 233.5-4.5° (H₂O). XII (1.26 g.) in 30 ml. anhydrous MeOH containing dry HCl refluxed 8 hrs. yielded 75% I [Ar = 2-MeO₂C₆H₄, Ar' = 4,6,2-(O₂N)₂(H₂NO₂S)C₆H₂] (XIII), m. 230.5-2.5°. XIII (100 mg.) in 10 ml. alc. hydrogenated 24 hrs. at 20°/4 atmospheric with 100 mg. PtO₂ and the reduced product acetylated gave I [Ar = 2-MeO₂CC₆H₄, Ar' = 4,6,2-(AcNH)₂-(H₂NO₂S)C₆H₂], m. 232-3° (95% alc.). XIII (500 mg.) hydrogenated and cyclized 65 hrs. in refluxing PhNO₂ gave 26% dark red XI, m. 276-7° (PhNO₂). Chromatography of the mother liquors on Al₂O₃ and elution of the C₆H₆-washed column with 1:9 EtOH-Me₂CO gave XI and 3-aminophenazine-1-sulfonamide (XIV). XII (360 mg.) hydrogenated and cyclized 44 hrs. in boiling PhNO₂ gave 124 mg. impure II (R = 3-NH₂, R₁ = 9-CO₂H, R₂ = 1-SO₂NH₂) (XV), which was also obtained by oxidative cyclization of I [Ar = 2-HO₂CC₆H₄, Ar' = 4,6,2-(H₂N)₂(SO₂NH₂)C₆H₂]. The mother liquors chromatographed on Al₂O₃ and the Et₂O-washed column eluted with Me₂CO gave XIV. XI (50.5 mg.) in 5 ml. 2N NaOH kept 30 min. at 100° and diluted to 15 ml., the filtered solution cooled and the pH adjusted to 5 by addition of AcOH yielded 95% XV, m. >330°. Oleum (15 ml., 20%) containing 2,3-Br(O₂N)C₆H₃CO₂H heated 3 hrs. at 155-60°, the cooled mixture added to a min. of ice, and the hot filtered solution salted out with NaCl gave 4,5,3-Br(O₂N)(HO₂C)C₆H₂-SO₃Na (XVI), m. >300°. Oleum (90 ml., 20%) containing 25 g. o-BrC₆H₄CO₂H heated 4 hrs. at 100°, cooled and treated below 40° with 25 ml. fuming HNO₃ (d. 1.5), the mixture cautiously warmed to 98° and the temperature maintained 5 hrs., the cooled mixture poured onto ice and kept 16 hrs., filtered and salted out with NaCl yielded 91% XVI, converted by heating 3 hrs. at 96-8° in ClSO₃H to yield 58% 4,5,3-Br(O₂N)(HO₂C)C₆H₂SO₂Cl, m. 197-9°, stirred (8.8 g.) in 50 ml. aqueous NH₄OH (d. 0.88) to give 6.6 g. 4,5,3-Br(O₂N)(CO₂H)C₆H₂SO₂NH₂ (XVII), m. 218-21°. XVII (6.5 g.), 3 g. p-H₂NC₆H₄NHAc, and 4.1 g. NaOAc refluxed 4 hrs. in 50 ml. alc. and the residue on evaporation taken up in H₂O, the filtered solution acidified with concentrated HCl and the precipitate recrystd. from dilute AcOH yielded 68% I [Ar = 4-AcNHC₆H₄, Ac' = 2,6,4-HO₂C-(O₂N)(H₂NO₂S)C₆H₂], m. 250-1°, hydrolyzed by refluxing 1 hr. in 2N HCl to give 68% I [Ar = 4-H₂NC₆H₄, Ac' = 2,6,4-(HO₂C)(O₂N)(H₂NO₂S)C₆H₂] (XVIII)-HCl salt. The salt (500 mg.) in 20 ml. MeOH containing dry HCl refluxed 8 hrs. and the MeOH evaporated in vacuo, the residue taken up in cold HCl and the filtered solution treated with aqueous NaOAc gave 66% I [Ar = 4-H₂-NC₆H₄, Ar' = 2,6,4-(MeO₂C)(O₂N)(H₂NO₂S)C₆H₂] (XIX), m. 193.5-6.5°. Attempted recrystn. of XIX from BuOH gave XVIII, m. 268-70°, converted into the above-mentioned HCl salt. XIX (300 mg.) hydrogenated and the product cyclized by boiling 60 hrs. in PhNO₂, the cooled, filtered mixture chromatographed on Al₂O₃ and the washed (C₆H₆, Et₂O, Me₂CO, EtOH, H₂O) column eluted with 1% aqueous C₅H₅N yielded 14% II (R = 8-NH₂, R₁ = 4-CO₂H, R₂ = 2-SO₂NH₂) (XX), m. >330°. Synthesis of XX via I [Ar = 2,4-(O₂N)₂C₆H₃, Ar' = 2-HO₂CC₃H₄] (XXI) was attempted. ClSO₃H (7.5 ml.) added slowly to 10.5 g. dry XXI with effervescence and rise of temperature to 70°, the mixture kept 1 hr. at 110° (oil bath), and the cooled mixture poured onto ice yielded 92%

5,7-dinitroacridone-2-sulfonyl chloride, m. 272-6° (decomposition) (PhMe), converted by addition of concentrated NH₄OH to yield 95% 5,7-dinitroacridone-2-sulfonamide, m. >300°. The reactants of the above model compds. II with aqueous acid, together with other evidence led to the given structure for aeruginosin B (XXII), a red crystalline pigment from a strain of *Pseudomonas aeruginosa*.
CC 38 (Heterocyclic Compounds (More Than One Hetero Atom))

L148 ANSWER 6 OF 6 HCAPLUS COPYRIGHT 2005 ACS on STN

1955:69039 Document No. 49:69039 Original Reference No.

49:13212f-i,13213a-i,13214a-g The synthesis and properties of the 5-phenylthiophene-2-and 3-ols. Kosak, Alvin I.; Palchak, Robert J. F.; Steele, Wallace A.; Selwitz, Charles M. (Univ. of Cincinnati, Cincinnati, O.). Journal of the American Chemical Society, 76, 4450-4 (Unavailable) 1954. CODEN: JACSAT. ISSN: 0002-7863. OTHER SOURCES: CASREACT 49:69039.

AB 2-Hydroxy-5-phenylthiophene (I) has been synthesized by the oxidation of 2-phenyl-5-thienyl Grignard reagent or the corresponding Li derivative, and by the cyclization of Bz(CH₂)₂CO₂H (II). The chemical reactions of I and of the 3-OH isomer (III) of I demonstrated that these compds. exist in both keto and enol forms. The spectral data indicated that the enol structures predominate in alc. solution and the keto tautomers in CHCl₃ solution
3-Phenyl-1,2-dithia-3-cyclopenten-5-one (IV), m. 116 .0-16.8°, was prepared in 47% yield by the method of Friedlander and Kielbasinski (C.A. 7, 2193), except that the S-PhCH:CHCO₂Et reaction product was extracted with Me₂CO followed by EtOH. IV (170 g.) in 484 g. molten Na₂S.9H₂O added at 0° to 25 g. ClCH₂CO₂H in 1.5 l. H₂O neutralized with Na₂CO₃, the mixture filtered, the filtrate acidified with 1:1 HCl against Congo red, the precipitated oil let stand 3 days, the resulting crystalline solid combined with that from two similar 165-g. runs, the recovered IV treated in the same manner, and the combined product (450 g.), m. 155-6°, recrystd. from AcOH gave cis-4-oxo-6-phenyl-3,7-dithia-5-nonenedioic acid (V), colorless needles, m. 156.5-7.0°. V (200 g.) and 200 g. NaOAc in 600 cc. Ac₂O heated 4 hrs. on the water bath, most of the excess Ac₂O removed, the residue diluted with 3 l. ice and H₂O, the mixture let stand overnight, the dark brown precipitate filtered off, washed with H₂O, and extracted repeatedly with 200-cc. portions ligroine (b. 90-120°) at room temperature, and the combined extract worked up gave 112 g. acetate (VI) of III, faintly yellow solid, m. 72-5°. VI (5 g.) in 200 cc. EtOH and 10 cc. 10% aqueous NaOH warmed several min. until the addition of a drop of it to H₂O no longer produced turbidity, the mixture diluted with ice water and acidified with dilute HCl, and the resulting pink precipitate recrystd. from petr. ether yielded 2.4 g. III, pale yellow solid, m. 78°. Cyclohexanone (117.8 g.) in 200 cc. Et₂O added rapidly with stirring to 2-lithiothiophene (from 101 g. thiophene) at -78°, the mixture let stand at room temperature overnight, cooled, and hydrolyzed with cold HCl, and the organic layer washed with H₂O, dried, and fractionated gave 94.2 g. 2-(1-cyclohexenyl)thiophene (VII), b₅ 117-20°, and 43 g. unreacted thiophene; VII, b₇ 107-8°, was also prepared in 80% yield by the method of Fieser and Szmuszkovicz (C.A. 43, 3365g). Chloranil (120 g.), 41 g. VII, and 150 cc. C₆H₆ refluxed 24 hrs.,

the mixture filtered, the filtrate extracted with 50-cc. portions 12% aqueous NaOH until the exts. were colorless, and the C₆H₆ solution washed with 100 cc. H₂O, dried, and distilled yielded 29.5 g. 2-phenylthiophene (VIII), b₄ 109-10°, m. 35-6°, which recrystd. from aqueous MeOH gave colorless plates, m. 37.0-7.5°; VIII decomposed gradually on standing at room temperature, but can be stored in stoppered bottles in the refrigerator. VIII (45 g.), 49.5 g. N-bromosuccinimide, and 1 g. Bz₂O₂ in 230 cc. CCl₄ refluxed 7.5 hrs., the cooled mixture filtered, the filter residue washed with CCl₄, the filtrate extracted 5 times with 50-cc. portions 10% aqueous NaOH and twice with H₂O, dried, and evaporated, and the residue recrystd. from aqueous MeOH yielded 56.5 g. 5-Br derivative (IX) of VIII, colorless platelets, m. 84.0-4.5° (recrystd. from Et₂O, m. 85.0-6.0°). Br (83 g.) in 500 cc. CCl₄ added dropwise to 83 g. VIII in 500 cc. CCl₄, the mixture let stand 12 hrs. at room temperature, washed with aqueous NaHCO₃, dried with CaCl₂, and distilled gave 114 g. IX, pale yellow solid, m. 56°, which recrystd. from MeOH gave 105 g. pure IX, m. 85-6°. The Grignard reagent from 23.9 g. IX, 6.5 g. Mg, and 18.5 g. iso-PrBr in 200 cc. Et₂O, treated with 10 g. iso-PrBr in 30 cc. Et₂O, the solution refluxed 1 hr., cooled to below 7.5°, treated with 0.1 mole O, stored in a stoppered flask overnight with cooling, and poured into Dry-Ice-dilute H₂SO₄ mixture (H₂S evolution), the organic layer diluted with C₆H₆, extracted with three 50-cc. portions cold 12% aqueous NaOH, dried, and distilled, and the residue combined with the yellow solid previously obtained and recrystd yielded 0.51 g. VIII, yellow plates, m. 241-2°; the alkaline exts. acidified and extracted with Et₂O, the extract extracted 3 times with aqueous NaHCO₃ to remove 0.57 g. 5-phenyl-2-thiophenecarboxylic acid, m. 186-7° (from 50% aqueous AcOH after clarification of the Na salt with C), dried with Drierite under N in the cold and evaporated, the residue dissolved in cold MeOH, the solution diluted with H₂O, and the colorless crystalline precipitate filtered under N in a dry box gave 5.40 g. I, m. 81.5-1.8°; it turned steel-gray on standing, but could be repurified by vacuum sublimation; it caused dermatitis on the hands of 2 persons. VIII (23.8 g.) added to 0.23 mole BuLi and 185 cc. Et₂O (a similar solution carbonated gave 75% 5-phenylthiophene-2-carboxylic acid), the solution treated with 0.4 mole cyclohexylmagnesium bromide in Et₂O under N, cooled, bubbled at -20° with O, refrigerated 18 hrs. in a stoppered flask, and filtered, the filtrate acidified with 60 cc. cold HCl, washed with 100 cc. ice water, and extracted with five 100-cc. portions 12% aqueous NaOH, the alkaline extract washed 3 times with 100 cc. 1:1 Et₂O-C₆H₆ and acidified with 30 cc. cold HCl, and the precipitate quickly recrystd. from Et₂O gave 7.8 g. I, m. 81.2-1.6°. In a similar run with CH₂:CHCH₂MgBr the yield of I was 5%. BuLi gave no I but 18% VIII, m. 230-1.5°. The Grignard reagent from 6.0 g. IX and 5.0 g. cyclohexyl bromide divided into 2 portions, 1 part poured over Dry Ice, hydrolyzed with cold dilute HCl and extracted with aqueous Na₂CO₃, and the alkaline extract acidified and extracted with Et₂O gave 1.3 g. 2-phenylthiophene-5-carboxylic acid; the other portion treated with O yielded 0.2 g. 5,5'-diphenyl-2,2'-dithienyl, and 0.06 g. bis(β-mercaptostyryl)maleic acid di-γ-lactone (X). P₂S₅ (46.7 g.) in 275 cc. hot pyridine added to 35.6 g. II in 100 g. pyridine and 400 cc. CHCl₃ under N, the mixture refluxed

80 min., treated with 466 cc. HCl and ice, the aqueous layer extracted with five 300-cc. portions CHCl₃, the combined organic layer and exts. extracted repeatedly with 6% aqueous NaOH, the alkaline exts. cooled in Dry Ice and acidified with cold HCl, and the precipitate recrystd. under N from Et₂O and petr. ether yielded 7.85 g. I, m. 80-1°.

If O is not rigorously excluded from the reaction mixture, X is the principal, or sole, product. Me₂SO₄ (3 cc.) added dropwise during 1 hr. with stirring to 5 g. III and 1.6 g. KOH in 20 cc. H₂O at 0° under N, the solution refluxed 20 min., the aqueous layer extracted twice with Et₂O, and the combined organic layer and extract dried with Drierite and distilled gave 3.15 g. 3-methoxy-5-phenylthiophene (XI), b₃ 128-34° (analytical sample, b₃ 141-2°); it discolored on standing. I (0.85 g.), 0.70 g. BzH, and 25 cc. MeOH treated dropwise with HCl until a faint turbidity was observed, the mixture let stand 3 hrs. at room temperature, the solvent removed, and the orange residue recrystd. from petr. ether gave 2-phenyl-4-benzal-5-oxo-3,4-dihydrothiophene, m. 64.5-5.0°.

I (1 g.), 6 cc. Ac₂O, 1 g. Zn dust, and 2 drops PhCH₂NMe₃Br refluxed until the colored material disappeared, the mixture treated with 3 drops AcOH and filtered into 1 cc. boiling AcOH, the filtrate treated dropwise to hydrolyze the Ac₂O, cooled, and extracted with Et₂O, and the extract dried, decolorized with Darco, and evaporated yielded 0.95 g. acetate of I, m. 45-51° [colorless needles, m. 55-7° (sublimed in vacuo)]. I (8.8 g.) and 2.1 g. NaOH in 50 cc. H₂O treated with stirring at 0°, with 6.3 g.

Me₂SO₄, the mixture let stand 24 hrs. at room temperature under N and extracted with Et₂O, the Et₂O extract washed twice with 20-cc. portions 12% aqueous NaOH and then with H₂O, dried, clarified with Darco, and distilled, and the product redistd. twice gave 3.7 g.

2-methoxy-5-phenylthiophene (XII), pale yellow liquid, b₁ 135-6°, n_{25D} 1.6308. I treated with CH₂N₂ in Et₂O gave untractable tars. The Li salt of I treated with MeI or Me₂SO₄, or the Na salt treated with MeI did not give the XII. PhCH:CH₂Et (XIII) (63 g.), b₅ 67-9°, added dropwise to 500 g. molten S with stirring, the mixture kept at 270-330 mm., and the resulting 56 g. orange distillate fractionated yielded 39 g. unreacted XIII, b₂ 45-8°; 1.75 g. distillate, b₂ 48-80°; and a dark

brown residue; the 2nd fraction recrystd. from 85% EtOH yielded 1.24 g. VIII, colorless needles, m. 35-8°. XIII (101 g.)

and 70.5 g. S heated 13 hrs. at 195-200° and the mixture distilled gave 9.9 g. distillate, b₃ 80-120°, and 14.3 g. recovered XIII, b₂ 96-8°, m. 36-8°. I and NaNO₂ in

aqueous EtOH added to cold dilute HCl gave X and a trace of yellow solid, m. 196-8°. I and NaNO₂ in aqueous base added to cold

dilute HCl gave a dark-colored base-insol. solid. I and N oxides gave intractable oils and X. iso-AmONO added dropwise to I in Et₂O

through which HCl was bubbled gave X and tars. I (100 mg.) in C₆H₆, CCl₄, CS₂, and petr. ether let stand in 25-cc. flasks

loosely stoppered with cotton gave purple solns. which showed no change after 18 hrs. standing. Similar solns. in dioxane, Et₂O,

and CHCl₃ assumed some reddish tinge within 3.5 hrs., and were redder at the end of 18 hrs.; almost all I could be recovered

unchanged. The solution in absolute EtOH had deposited a slight precipitate after 3.5 hrs., and the solute had completely precipitated after 18 hrs.

as X. Solns. in 95% EtOH and in MeOH containing slight ppts. after 15 min. and gave quantitatively X within 18 hrs. A heavy precipitate was

deposited almost immediately from pyridine solns. of I. A CS₂, solution of I was markedly dichroic: red by reflected light, purple by transmitted light. X recrystd. from dioxane gave dark green needles, m. 304-5°. X dissolved in concentrated H₂SO₄ with a brilliant green color; it was readily decomposed by dilute or concentrated solns. of alkali. Solns. of I in morpholine and piperidine gradually deposited colorless, S-free crystals, m. 103-4° (decomposition), containing 49.5% C and 8.0% H. The ultraviolet absorption spectra of I, III, VIII, XI, and XII are recorded.

CC 10 (Organic Chemistry)

=> d que stat l151

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L7	196951	SEA	FILE=REGISTRY	ABB=ON	PLU=ON	L6 AND 1-4/N
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L45	981	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L23 OR L31 OR L36
L46			QUE	ABB=ON	PLU=ON	MOIET? OR UNIT? OR GROUP? OR FUNC?
						OR FRAGMENT? OR PORTION? OR SUBSTITUENT?
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 SS(W) LINK? OR CROSSLINK? OR CATALY? OR HARDEN?)
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 OR L131
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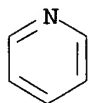
L151 ANSWER 1 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
 2005:733029 Document No. 143:369896 Organic **dyes**
 containing thienylfluorene conjugation for solar cells. Thomas,
 K. R. Justin; Lin, Jiann T.; Hsu, Ying-Chan; Ho, Kuo-Chuan
 (Institute of Chemistry, Academia Sinica, Taipei, Taiwan).
 Chemical Communications (Cambridge, United Kingdom) (32),
 4098-4100 (English) 2005. CODEN: CHCOFS. ISSN: 1359-7345.
 Publisher: Royal Society of Chemistry.
 AB New organic **dyes** that contain variable lengths of
 conjugation featuring alternating thiophene and fluorene segments
 were synthesized and efficient nano-crystalline TiO₂ based **dye**
 -sensitized solar cells were fabricated using these mols. as

light-harvesting sensitizers. Overall solar energy conversion efficiencies of assembled solar cells ranged from 2.86- 5.50%, with a open cell voltages from 0.57 - 0.65 V, and short circuit current densities from 7.59 - 13.98 mA/cm².

IT 75-05-8, Acetonitrile, uses 118676-08-7,
tert-Butylpyridine
RL: DEV (Device component use); USES (Uses)
(organic dyes containing thienylfluorene conjugation for
solar cells)
RN 75-05-8 HCAPLUS
CN Acetonitrile (8CI, 9CI) (CA INDEX NAME)

H₃C-C≡N

RN 118676-08-7 HCAPLUS
CN Pyridine, (1,1-dimethylethyl)- (9CI) (CA INDEX NAME)



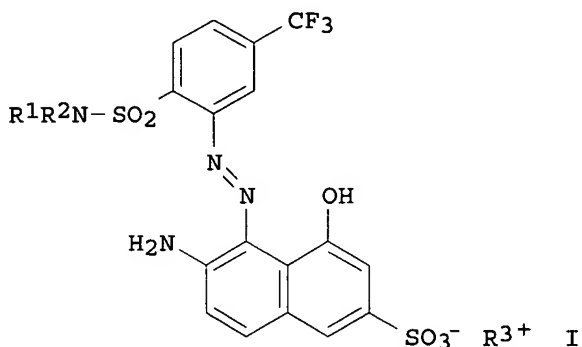
D1-Bu-t

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 42, 73, 74, 76
ST photosensitizing dye thienylfluorene conjugation aryl
amino heterojunction solar cell
IT Solar energy
(conversion, efficiency; organic dyes containing
thienylfluorene conjugation for solar cells)
IT Oxidation potential
(of new dyes; organic dyes containing
thienylfluorene conjugation for solar cells)
IT Coupling reaction
Heterojunction solar cells
Lithiation
Open circuit potential
Stille coupling reaction
(organic dyes containing thienylfluorene conjugation for
solar cells)
IT Dyes
(photosensitizing; organic dyes containing thienylfluorene
conjugation for solar cells)
IT Photocurrent
(short circuit; organic dyes containing thienylfluorene
conjugation for solar cells)
IT 866413-61-8P
RL: PRP (Properties); SPN (Synthetic preparation); PREP
(Preparation)

- (compound 10; organic **dyes** containing thienylfluorene conjugation for solar cells)
- IT 866413-62-9P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(compound 11; organic **dyes** containing thienylfluorene conjugation for solar cells)
- IT 866413-63-0P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(compound 12; organic **dyes** containing thienylfluorene conjugation for solar cells)
- IT 866413-64-1P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(compound 13; organic **dyes** containing thienylfluorene conjugation for solar cells)
- IT 866413-65-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(compound 2; organic **dyes** containing thienylfluorene conjugation for solar cells)
- IT 866413-60-7P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(compound 9; organic **dyes** containing thienylfluorene conjugation for solar cells)
- IT 13716-12-6, Tris(tert-butyl)phosphine 32005-36-0, Bis(dibenzylideneacetone)palladium
RL: CAT (Catalyst use); USES (Uses)
(organic **dyes** containing thienylfluorene conjugation for solar cells)
- IT 75-05-8, Acetonitrile, uses 7553-56-2, Iodine, uses 10377-51-2, Lithium iodide (LiI) 118676-08-7, tert-Butylpyridine 141460-19-7, N 3 Dye
RL: DEV (Device component use); USES (Uses)
(organic **dyes** containing thienylfluorene conjugation for solar cells)
- IT 1317-70-0, Anatase
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(organic **dyes** containing thienylfluorene conjugation for solar cells)
- IT 631-61-8, Ammonium acetate
RL: MOA (Modifier or additive use); USES (Uses)
(organic **dyes** containing thienylfluorene conjugation for solar cells)
- IT 64-19-7, Acetic acid, reactions 68-12-2, Dimethylformamide, reactions 90-30-2, N-Phenyl-1-naphthylamine 109-72-8, n-Butyl lithium, reactions 372-09-8, Cyanoacetic acid 1461-22-9, Tributyl tin chloride 15424-38-1 65838-93-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(organic **dyes** containing thienylfluorene conjugation for solar cells)

L151 ANSWER 2 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
 2005:235198 Document No. 142:281530 Azo dyes showing good heat and
 light resistance, and water and solvent solubility. Araki,
 Katsumi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo
 Koho JP 2005068264 A2 20050317, 22 pp. (Japanese). CODEN:
 JKXXAF. APPLICATION: JP 2003-298381 20030822.

GI



AB The azo dyes are 5-(2-aminosulfonyl-5-trifluoromethylphenylazo)-6-amino-4-hydroxynaphthalenesulfonic acids I (R1, R2 = H, C1-21 alkyl, C2-21 alkenyl, C6-21 aryl, C7-21 aralkyl; R1R2 may form ring with N; R3+ = H, metal cation, N-containing cation). Thus, I (R1 = Ph, R2 = Et, R3 = Na) was manufactured from 2-nitro-4-trifluoromethylbenzenesulfonyl chloride in three steps.

IT 103-69-5 108-91-8, Cyclohexylamine, reactions

123-75-1, Pyrrolidine, reactions 280-57-9,

1,4-Diazabicyclo[2.2.2]octane

RL: RCT (Reactant); RACT (Reactant or reagent)

(manufacture of [(aminosulfonyl)(trifluoromethyl)phenylazo]aminohydroxynaphthalenesulfonic acid dyes showing good heat and light resistance, and water and solvent solubility)

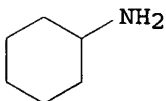
RN 103-69-5 HCAPLUS

CN Benzenamine, N-ethyl- (9CI) (CA INDEX NAME)

Et-NH-Ph

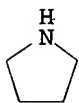
RN 108-91-8 HCAPLUS

CN Cyclohexylamine (9CI) (CA INDEX NAME)

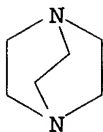


RN 123-75-1 HCAPLUS

CN Pyrrolidine (8CI, 9CI) (CA INDEX NAME)



RN 280-57-9 HCAPLUS
 CN 1,4-Diazabicyclo[2.2.2]octane (8CI, 9CI) (CA INDEX NAME)



IC ICM C09B029-30
 ICS C07D487-08
 CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners,
 and Photographic Sensitizers)
 Section cross-reference(s): 27
 ST aminosulfonyl trifluoromethylphenyl azo aminohydroxynaphthalene
 sulfonic acid dye; water sol azo dye heat
 resistance; light resistance solvent sol azo dye
 IT Light-resistant materials
 (heat-resistant; manufacture of [(aminosulfonyl)(trifluoromethyl)phe
 nylazo]aminohydroxynaphthalenesulfonic acid
 dyes showing good heat and light resistance, and water
 and solvent solubility)
 IT Heat-resistant materials
 (light-resistant; manufacture of [(aminosulfonyl)(trifluoromethyl)ph
 enylazo]aminohydroxynaphthalenesulfonic acid
 dyes showing good heat and light resistance, and water
 and solvent solubility)
 IT Azo dyes
 (water-soluble; manufacture of [(aminosulfonyl)(trifluoromethyl)phenyla
 zo]aminohydroxynaphthalenesulfonic acid dyes
 showing good heat and light resistance, and water and solvent
 solubility)
 IT 847278-25-5P 847278-26-6P
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP
 (Preparation); RACT (Reactant or reagent)
 (manufacture of [(aminosulfonyl)(trifluoromethyl)phenylazo]aminohydr
 oxynaphthalenesulfonic acid dyes showing
 good heat and light resistance, and water and solvent solubility)
 IT 847278-27-7P 847278-28-8P 847278-29-9P 847278-31-3P
 RL: IMF (Industrial manufacture); TEM (Technical or engineered
 material use); PREP (Preparation); USES (Uses)
 (manufacture of [(aminosulfonyl)(trifluoromethyl)phenylazo]aminohydr
 oxynaphthalenesulfonic acid dyes showing
 good heat and light resistance, and water and solvent solubility)
 IT 103-69-5 108-91-8, Cyclohexylamine, reactions
 123-75-1, Pyrrolidine, reactions 280-57-9,

1,4-Diazabicyclo[2.2.2]octane 837-95-6 16781-08-1

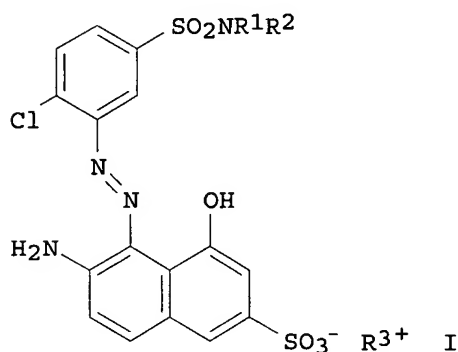
RL: RCT (Reactant); RACT (Reactant or reagent)

(manufacture of [(aminosulfonyl)(trifluoromethyl)phenylazo]aminohydroxynaphthalenesulfonic acid dyes showing good heat and light resistance, and water and solvent solubility)

L151 ANSWER 3 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN

2005:231721 Document No. 142:281529 Azo dyes showing good heat and light resistance, and water and solvent solubility. Araki, Katsumi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2005068270 A2 20050317, 25 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-298555 20030822.

GI



AB The azo dyes are 5-(2-chloro-5-aminosulfonylphenylazo)-6-amino-4-hydroxynaphthalenesulfonic acids I (R1, R2 = H, C1-21 alkyl, C2-21 alkenyl, C6-21 aryl, C7-21 aralkyl; R1R2 may form ring with N; R3+ = H, metal cation, N-containing cation). Thus, I (R1 = Ph, R2 = H, R3 = Na) was manufactured from 3-nitro-4-chlorobenzenesulfonyl chloride in three steps.

IT 62-53-3, Aniline, reactions 280-57-9,

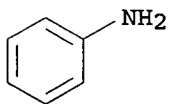
1,4-Diazabicyclo[2.2.2]octane

RL: RCT (Reactant); RACT (Reactant or reagent)

(manufacture of [chloro(aminosulfonyl)phenylazo]aminohydroxynaphthalenesulfonic acid dyes showing good heat and light resistance, and water and solvent solubility)

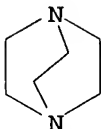
RN 62-53-3 HCAPLUS

CN Benzenamine (9CI) (CA INDEX NAME)



RN 280-57-9 HCAPLUS

CN 1,4-Diazabicyclo[2.2.2]octane (8CI, 9CI) (CA INDEX NAME)



IC ICM C09B029-30
 CC 41-3 (**Dyes**, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
 ST aminosulfony chlorolphenyl azo aminohydroxynaphthalene sulfonic **acid dye**; water sol azo dye heat resistance; light resistance solvent sol azo dye
 IT Light-resistant materials (heat-resistant; manufacture of [chloro(aminosulfonyl)phenylazo]aminohydroxynaphthalenesulfonic **acid dyes** showing good heat and light resistance, and water and solvent solubility)
 IT Heat-resistant materials (light-resistant; manufacture of [chloro(aminosulfonyl)phenylazo]aminohydroxynaphthalenesulfonic **acid dyes** showing good heat and light resistance, and water and solvent solubility)
 IT Azo dyes (water-soluble; manufacture of [chloro(aminosulfonyl)phenylazo]aminohydroxynaphthalenesulfonic **acid dyes** showing good heat and light resistance, and water and solvent solubility)
 IT 137-49-5P 94160-04-0P
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) (manufacture of [chloro(aminosulfonyl)phenylazo]aminohydroxynaphthalenesulfonic **acid dyes** showing good heat and light resistance, and water and solvent solubility)
 IT 847229-90-7P 847229-91-8P 847229-92-9P 847229-94-1P
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (manufacture of [chloro(aminosulfonyl)phenylazo]aminohydroxynaphthalenesulfonic **acid dyes** showing good heat and light resistance, and water and solvent solubility)
 IT 62-53-3, Aniline, reactions 97-08-5 280-57-9, 1,4-Diazabicyclo[2.2.2]octane 16781-08-1 845255-87-0, p-(Cyclohexylmethylamino)acetanilide
 RL: RCT (Reactant); RACT (Reactant or reagent) (manufacture of [chloro(aminosulfonyl)phenylazo]aminohydroxynaphthalenesulfonic **acid dyes** showing good heat and light resistance, and water and solvent solubility)

L151 ANSWER 4 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
 2004:529957 Document No. 141:72967 Yellow azo pigment composition with good heat stability and tinting strength and coloring composition therewith. Okamoto, Hisao; Zama, Yoshiyuki; Nogami, Atsushi; Komiyama, Chuji; Nakamura, Michie (Dainichiseika Color and Chemical Mfg. Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP

2004182952 A2 20040702, 11 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 2002-355127 20021206.

AB The composition having heat stability index (HSI) <2.0 and useful in ink-jet inks, color filter, etc., contains a yellow azo pigment with HSI ≤1.5 and a yellow azo pigment with HSI ≥2.0. A powdered pigment composition contained C.I. Pigment Yellow 94 and C.I. Pigment Yellow 74 at 25:75 ratio, showing HSI 1.8 and average particle size 0.155 μm.

IC ICM C09B067-22

ICS B41J002-01; B41M005-00; C09B029-33; C09B033-153; C09B035-035; C09B035-04; C09B035-10; C09B035-22; C09D011-00; G02B005-20; G02B005-22; G03G009-09

CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

Section cross-reference(s): 42, 73, 74

ST yellow azo pigment compn heat stability tinting strength; heat stability index yellow azo pigment; color filter jet printing ink yellow azo pigment

IT 2512-29-0, C.I. Pigment Yellow 1 2904-04-3, C.I. Pigment Yellow 49 4106-67-6, C.I. Pigment Yellow 5 4106-76-7, C.I. Pigment Yellow 6 4531-49-1, C.I. Pigment Yellow 17 5102-83-0, C.I. Pigment Yellow 13 5280-80-8, C.I. Pigment Yellow 95 5468-75-7, C.I. Pigment Yellow 14 5567-15-7, C.I. Pigment Yellow 83 5580-57-4, C.I. Pigment Yellow 93 5580-58-5, C.I. Pigment Yellow 94 5979-28-2, C.I. Pigment Yellow 16 6358-31-2, C.I. Pigment Yellow 74 6358-37-8, C.I. Pigment Yellow 55 6358-85-6, C.I. Pigment Yellow 12 6486-23-3, C.I. Pigment Yellow 3 6486-26-6, C.I. Pigment Yellow 2 6528-34-3, C.I. Pigment Yellow 65 12225-18-2, C.I. Pigment Yellow 97 13515-40-7, C.I. Pigment Yellow 73 14569-54-1, C.I. Pigment Yellow 63 15110-84-6, C.I. Pigment Yellow 87 15993-42-7, C.I. Pigment Yellow 111 22094-93-5, C.I. Pigment Yellow 81 29920-31-8, C.I. Pigment Yellow 120 31837-42-0, C.I. Pigment Yellow 151 35636-63-6, C.I. Pigment Yellow 175 38489-24-6, C.I. Pigment Yellow 167 52320-66-8, C.I. Pigment Yellow 75 61968-84-1, C.I. Pigment Yellow 116 68134-22-5, C.I. Pigment Yellow 154 68516-73-4, C.I. Pigment Yellow 155 74441-05-7, C.I. Pigment Yellow 181 77804-81-0, C.I. Pigment Yellow 180 79953-85-8, C.I. Pigment Yellow 128 713104-87-1, C.I. Pigment Yellow 90

RL: TEM (Technical or engineered material use); USES (Uses)

(yellow azo pigment composition with good heat stability and tinting strength and coloring composition therewith)

L151 ANSWER 5 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN

2004:80987 Document No. 140:130469 Novel methods and compositions for improved electrophoretic display performance. Wu, Zarngrarh George; Haubrich, Jeanne E.; Wang, Xiaojia; Liang, Rongchang (Sipix Imaging, Inc., USA). PCT Int. Appl. WO 2004010206 A2 20040129, 38 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU,

AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CO, CR, CU, CZ, DE, DE, DK, DK, DM, DZ, EC, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, AM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB,

GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR.
 (English). CODEN: PIXXD2. APPLICATION: WO 2003-US21681 20030710.
 PRIORITY: US 2002-2002/PV396680 20020717.

AB The invention is directed to novel methods and compns. useful for improving the performance of electrophoretic displays. The methods comprise adding a high absorbance dye or pigment, or conductive particles or a charge transport material into an electrode protecting layer of the display.

IT 86-74-8D, Carbazole, derivs. 1518-16-7

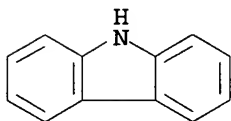
36118-45-3D, Pyrazoline, Ph dialkylaminostyrene
 dialkylaminophenyl derivs.

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)

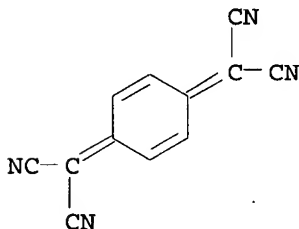
RN 86-74-8 HCAPLUS

CN 9H-Carbazole (9CI) (CA INDEX NAME)



RN 1518-16-7 HCAPLUS

CN Propanedinitrile, 2,2'-(2,5-cyclohexadiene-1,4-diylidene)bis-
 (9CI) (CA INDEX NAME)



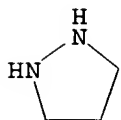
RN 36118-45-3 HCAPLUS

CN Pyrazole, dihydro- (9CI) (CA INDEX NAME)

CM 1

CRN 504-70-1

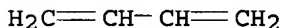
CMF C3 H8 N2



IT 9003-18-3
 RL: PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
 (nitrile rubber, vinyl group-terminated, Hycar 1300-43; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
 RN 9003-18-3 HCAPLUS
 CN 2-Propenenitrile, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)
 CM 1
 CRN 107-13-1
 CMF C3 H3 N



CM 2
 CRN 106-99-0
 CMF C4 H6



IC ICM G02F001-00
 CC 48-7 (Unit Operations and Processes)
 Section cross-reference(s): 29, 35, 38, 74, 76
 ST electrophoretic display **dye pigment** conducting particle polymer sealant adhesive; electrophotog photoconductor photoreceptor coated electrode metal complex oxide organometallic
 IT Oxidation potential
 (<1.4 V (vs. SCE) for hole transport materials; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
 IT Isoalkanes
 RL: NUU (Other use, unclassified); USES (Uses)
 (C7-10; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
 IT Cyanine **dyes**
 (Naphthalo, metal complexes; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
 IT UV absorption
 (UV-visible, of **dyes and pigments**;

- dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)**
- IT Carbon black, processes
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(Vulcan XC-72, composite sealant with Kraton G-R 6919 and Kraton G 1650; **dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)**
- IT Polysiloxanes, processes
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(acrylates, Ebecryl 1360; **dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)**
- IT Polysiloxanes, uses
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(acrylates, microcup polymer, laminated with primer-coated ITO/PET film; **dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)**
- IT Ketones, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(alkadienyl; **dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)**
- IT Nitriles, uses
Nitro compounds
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(and oligomers and polymers of; **dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)**
- IT Amines, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(aromatic; **dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)**
- IT Isoprene-styrene rubber
Polymers, uses
Styrene-butadiene rubber, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(block, triblock; **dyes, pigments,**

- crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Synthetic rubber, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (butadiene-isoprene-styrene, hydrogenated, block, composite sealant with Kraton G 1650 and Carb-O-Sil or carbon black; **dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)**
- IT Metalloporphyrins
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
 (cobalt; **dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)**
- IT Acrylic polymers, uses
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
 (cyano-containing; **dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)**
- IT Isocyanates
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
 (di- and poly- monomers, polymers containing; **dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)**
- IT Adhesives
 Coating materials
 Crosslinking
Dyes
 Electric conductors
 Electrodes
 Electrophotographic apparatus
 Electrophotographic photoconductors (photoreceptors)
 Embossing
 Lamination
Pigments, nonbiological
 Sealing compositions
 (**dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)**
- IT Thermoplastic rubber
 RL: DEV (Device component use); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (**dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)**
- IT Alkadienes
 Enamines

- Epoxy resins, uses
 Hydrazones
 Metals, uses
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
 (dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Diazo compounds
 Metallophthalocyanines
 Metalloporphyrins
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
 (dyes; dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Oxides (inorganic), uses
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
 (elec. conductive; dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Carbonaceous materials (technological products)
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
 (elec. conductor; dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Optical imaging devices
 (electrophoretic; dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Polyurethanes, uses
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (encapsulated TiO₂; dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Polyesters, processes
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (film coated with ITO; dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Styrene-butadiene rubber, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (hydrogenated, block, triblock, Kraton G 1650, composite with

- Kraton G-R 6919/Carb-O-Sil or Carbon black; **dyes**, **pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Engineering
(inventions; **dyes**, **pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Epoxides
RL: RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
(mono- and multifunctional oligomers and polymers containing; **dyes**, **pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Azo **dyes**
(monoazo, diazo, and polyazo; **dyes**, **pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Allylic compounds
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(multifunctional monomers, polymers of; **dyes**, **pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Metalloporphyrins
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(nickel, **dyes**; **dyes**, **pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Heterocyclic compounds
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(nitrogen, five-membered, triazoles; **dyes**, **pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Alloys, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(nonferrous; **dyes**, **pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT IR absorption
(of **dyes** and **pigments**; **dyes**, **pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Electrophoresis apparatus

- (optical imaging; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Polymerization
(photopolymn.; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Transition metal complexes
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(phthalocyanine, **dyes; dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Vinyl compounds, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(polymers, from multifunctional monomers; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Vanadyl complexes
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(porphyrin, **dyes; dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Plastics, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(thermoplastics; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Epoxides
Polyamides, reactions
Polycarbonates, reactions
Polyesters, reactions
Polyethers, reactions
Polyurethanes, reactions
Polyvinyl butyrals
RL: RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
(thermoset or thermoplastic precursor; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Plastics, uses
RL: DEV (Device component use); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

- (thermosetting; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Metallophthalocyanines
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
 (transition metal complexes, **dyes; dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Metalloporphyrins
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
 (vanadyl, **dyes; dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Nitrile rubber, processes
 RL: PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
 (vinyl group-terminated, Hycar 1300-43; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Ethers, reactions
 RL: RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
 (vinyl, polymers, oligomers and polymers containing, thermoset or thermoplastic precursor; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT Ethers, reactions
 RL: RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
 (vinyl, thermoset or thermoplastic precursor; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 4687-94-9, Ebecryl 600
 RL: PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
 (Bisphenol A-containing diacrylate; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 13048-33-4, 1,6-Hexanediol diacrylate
 RL: PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
 (HDODA; **dyes, pigments**, crosslinking

- sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 75081-21-9, ITX
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(ITX; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 50926-11-9, Indium tin oxide
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(PET film coated with; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 60506-81-2, SR 399
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(a tetraacrylate; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 41484-35-9, Irganox 1035
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(bis (hindered phenol thioether); **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 138184-94-8, Cab-O-Sil TS 720
RL: TEM (Technical or engineered material use); USES (Uses)
(composite sealant with Kraton G-R 6919 and Kraton G 1650; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 65181-78-4, N,N'-Bis(3-methylphenyl)-N-N'-diphenylbenzidine
RL: DEV (Device component use); USES (Uses)
(**dye**, in Duro-Tak adhesive layer; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 12227-55-3, Orasol Red BL 12237-23-9, Orasol Black CN 61931-55-3, Orasol Yellow 2GLN
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(**dye**, in Duro-Tak adhesive layer; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)

- IT 56996-93-1, Sudan Black 61901-87-9, Orasol Black RLI
71799-11-6, Orasol Blue GL
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(dye, in Duro-Tak adhesive layer; dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 14916-87-1, FC 3275
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(dye; dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 77-58-7, Dibutyltin dilaurate
RL: CAT (Catalyst use); USES (Uses)
(dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 78-93-3, Methyl ethyl ketone, uses
RL: DEV (Device component use); NUU (Other use, unclassified); USES (Uses)
(dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 147-14-8D, Copper phthalocyanine, derivs. 7429-90-5D, Aluminum, phthalocyanine or naphthalocyanine complexes 7439-89-6D, Iron, phthalocyanine or naphthalocyanine complexes 7439-92-1D, Lead, phthalocyanine or naphthalocyanine complexes 7439-95-4, Magnesium, processes 7440-02-0D, Nickel, naphthalocyanine derivs. complexes 7440-31-5D, Tin, phthalocyanine or naphthalocyanine complexes 7440-32-6D, Titanium, naphthalocyanine derivs. complexes 7440-43-9D, Cadmium, phthalocyanine or naphthalocyanine complexes 7440-48-4D, Cobalt, naphthalocyanine derivs. complexes 7440-62-2D, Vanadium, phthalocyanine or naphthalocyanine complexes 7440-66-6D, Zinc, phthalocyanine or naphthalocyanine complexes 7440-74-6D, Indium, phthalocyanine or naphthalocyanine complexes 78675-98-6D, Squaraine, derivs.
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 9003-42-3, Poly(ethyl methacrylate)
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 74-82-8D, Methane, triaryl derivs. 81-33-4 85-83-6, Sudan IV 85-86-9, Sudan III 86-74-8D, Carbazole, derivs.

92-52-4D, Biphenyl, derivs. 129-79-3, 2,4,7-Trinitro-9-fluorenone 288-42-6D, Oxazole, derivs. 288-99-3D, 1,3,4-Oxadiazole, 2,5-bis(4-N,N'-dialkylaminophenyl) 486-25-9, Fluorenone 486-25-9D, Fluorenone, oligomers and polymers of 809-73-4 842-07-9, Sudan yellow 966-88-1D, Benzaldehyde-N,N-diphenylhydrazone, p-dialkylamino derivs. 1159-53-1 1229-55-6, Sudan R 1450-63-1, 1,1,4,4-Tetraphenylbutadiene 1484-96-4 1518-16-7 2085-33-8 2417-00-7 2455-14-3 2491-91-0, 2,5-Bis(4-methylphenyl)-1,3,4-oxadiazole 3118-97-6, Sudan II 4197-25-5, Sudan Black B 5152-94-3 7429-90-5, Aluminum, uses 7429-90-5D, Aluminum, alloys 7439-89-6, Iron, uses 7439-89-6D, Iron, alloys 7440-02-0D, Nickel, alloys 7440-22-4, Silver, uses 7440-22-4D, Silver, alloys 7440-50-8, Copper, uses 7440-50-8D, Copper, alloys 7440-57-5, Gold, uses 7440-57-5D, Gold, alloys 7440-74-6, Indium, uses 7440-74-6D, Indium, alloys 7782-42-5, Graphite, uses 9003-39-8, Polyvinylpyrrolidone 9003-55-8, Styrene-butadiene copolymer 11120-54-0D, Oxadiazole, derivs. 12673-86-8, Antimony tin oxide 14705-63-6 14705-63-6D, alkylated and alkoxylated derivs. 14752-00-2 15546-43-7, N,N,N',N'-Tetraphenylbenzidine 20441-06-9 23467-27-8 24937-78-8, Ethylene-vinyl acetate copolymer 26009-24-5, Poly(p-phenylene vinylene) 33200-26-9 35079-58-4 35458-94-7 36118-45-3D, Pyrazoline, Ph dialkylaminostyrene dialkylaminophenyl derivs. 36118-45-3D, Pyrazoline, derivs. 41584-66-1 43134-09-4 51325-95-2 58280-31-2 58328-31-7, 4,4'-Bis(carbazol-9-yl)biphenyl 58473-78-2 59765-31-0 59869-79-3 69361-50-8D, bis(4-N,N-dialkylamino) 75232-44-9 76185-65-4 82532-76-1 83992-95-4 85171-94-4 89114-90-9 89114-91-0 89991-16-2 93376-18-2, (4-Butoxycarbonyl-9-fluorenylidene)malononitrile 93975-08-7 93975-09-8 94665-89-1 95270-88-5, Polyfluorene 95993-52-5 96492-45-4 97671-90-4 103079-11-4 105389-36-4, 4,4',4''-Tris(N,N-diphenylamino)triphenylamine 117944-65-7, Indium zinc oxide 123847-85-8 126213-51-2, Poly(3,4,-ethylenedioxythiophene) 127022-77-9, Hexakis(benzylthio)benzene 138171-14-9 138372-67-5 139092-78-7 139255-17-7 141752-82-1 142289-08-5 150405-69-9 154896-84-1 164534-25-2 174493-15-3 182507-83-1 184101-39-1 185690-39-5, 4,4',4''-Tris[N-(1-naphthyl)-N-phenylamino]triphenylamine 203799-76-2 254435-83-1, Sudan Blue 376386-75-3 482654-95-5 649735-34-2 649735-35-3 649735-37-5D, 2,5-bis(4-dialkylaminophenyl) derivs. 649735-38-6 650609-45-3 650609-46-4 650609-47-5 650609-48-6

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)

IT 68-12-2, Dimethylformamide, uses 108-21-4, Isopropyl acetate 108-88-3, Toluene, uses 110-54-3, Hexane, uses 141-78-6, Ethyl acetate, uses

RL: NUU (Other use, unclassified); USES (Uses)

(dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods

- and compns. for improved electrophoretic display performance)
- IT 650634-86-9, Duro-Tak 1105
 RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 6712-98-7 15625-89-5, Trimethylolpropane triacrylate
 165169-07-3, Desmodur N 3400 601484-87-1
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 198-55-0, Perylene 488-86-8D, Croconic acid, amine derivs. 3317-67-7, Cobalt phthalocyanine 12226-78-7, C.I.Solvent Blue 67 14055-02-8D, Nickel phthalocyanine, derivs. 14172-92-0, Nickel tetraphenylporphine 33273-09-5D, derivs. 52324-93-3, Titanium phthalocyanine
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
 (dyes; dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 650609-44-2P
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)
 (electrophoretic TiO₂ encapsulant; dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 13463-67-7, R900, uses
 RL: DEV (Device component use); USES (Uses)
 (encapsulated with electrophoretic polymer; dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 25038-59-9, PET, processes
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (film coated with ITO; dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 119313-12-1, Irgacure 369
 RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
 (initiator; dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 105729-79-1 700836-36-8

- RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(isoprene-styrene rubber, block, triblock; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 7440-02-0, Nickel, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(microcup base template; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 4687-94-9DP, Ebecryl 600, polymers containing 13048-33-4DP, HDDA, polymers containing 15625-89-5DP, TMPTA, polymers containing 60506-81-2DP, SR 399, polymers containing
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(microcup polymer, laminated with primer-coated ITO/PET film; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 9003-18-3
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(nitrile rubber, vinyl group-terminated, Hycar 1300-43; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 12047-27-7, K-Plus 16, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(**pigment**, in Duro-Tak adhesive layer; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 115452-84-1, Disperbyk 163
RL: MOA (Modifier or additive use); USES (Uses)
(polymeric dispersant; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 649735-33-1P
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(primer coating for ITO/PET film; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 106107-54-4 694491-73-1
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(styrene-butadiene rubber, block, triblock; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)

- IT 53568-48-2, Disperse-Ayd 6
RL: MOA (Modifier or additive use); USES (Uses)
(surfactant; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 79-10-7D, Acrylic acid, multifunctional and multi- esters, oligomers and polymers containing 79-10-7D, Acrylic acid, multifunctional esters 79-41-4D, Methacrylic acid, multifunctional and multi- esters, oligomers and polymers containing 79-41-4D, Methacrylic acid, multifunctional esters 100-42-5D, Styrene, derivs. 100-42-5D, Styrene, oligomers and polymers containing 9003-01-4D, Polyacrylic acid, alkyl esters 9004-36-8, Cellulose acetate butyrate 25087-26-7D, Polymethacrylic acid, alkyl esters
RL: RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
(thermoset or thermoplastic precursor; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 477290-74-7, Galden HT 200
RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(tri-hydric amino alc.; **dyes, pigments**, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)

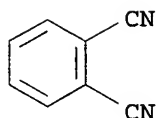
L151 ANSWER 6 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
2003:559917 Document No. 139:108807 Surface-modified pulverized organic pigments and color filters therewith showing less color change on thermal hysteresis. Katsube, Hiroshi; Funakura, Shoji; Yonehara, Yoshitomo; Araki, Shingo; Kishimoto, Masaaki; Yamaguchi, Yoshio (Dainippon Ink and Chemicals, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2003206414 A2 20030722, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-4542 20020111.

AB The pigments are coated on surface with 3-25 parts (to 100 parts core pigments) amino resins containing carboxyl or phenolic OH groups, preferably by solvent salt milling. Color resists pigmented with the pigments form transparent and heat-resistant color filter segments.

IT 91-15-6, Phthalodinitrile
RL: RCT (Reactant); RACT (Reactant or reagent)
(amino resin-coated pulverized organic pigments for color resists producing transparent heat-stable color filter segments)

RN 91-15-6 HCAPLUS

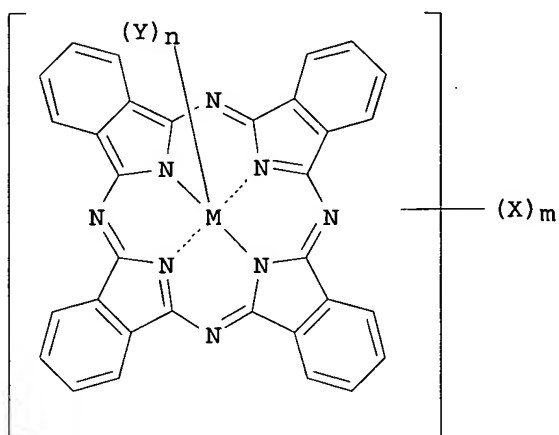
CN 1,2-Benzenedicarbonitrile (9CI) (CA INDEX NAME)



- IC ICM C09B067-08
ICS C09B067-04; G02B005-20; G02B005-22
- CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38, 41
- ST carboxyl amino resin coated color filter
pigment; brominated chloroaluminum phthalocyanine
color filter pigment; hue stability thermal
hysteresis color filter
- IT Polyesters, preparation
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(acrylic; amino resin-coated pulverized organic pigments for color resists producing transparent heat-stable color filter segments)
- IT Optical filters
Pigments, nonbiological
(amino resin-coated pulverized organic pigments for color resists producing transparent heat-stable color filter segments)
- IT Aminoplasts
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pigment coatings; amino resin-coated pulverized organic pigments for color resists producing transparent heat-stable color filter segments)
- IT 14154-42-8DP, brominated 14320-04-8DP, Zinc
phthalocyanine, brominated 210117-83-2P, Aronix M
7100-kayarad DPHA copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(amino resin-coated pulverized organic pigments for color resists producing transparent heat-stable color filter segments)
- IT 85-44-9, Phthalic anhydride 91-15-6, Phthalodinitrile
7446-70-0, Aluminum chloride, reactions 7646-85-7, Zinc
chloride, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(amino resin-coated pulverized organic pigments for color resists producing transparent heat-stable color filter segments)
- IT 181779-99-7P, 2-(4,6-Diamino-1,3,5-triazin-2-yl)benzoic
acid-formaldehyde copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pigment coatings; amino resin-coated pulverized organic pigments for color resists producing transparent heat-stable color filter segments)

L151 ANSWER 7 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
 2003:559078 Document No. 139:125210 Surface-modified pulverized
 organic pigments showing bright green color and
 color filters therewith. Katsube, Hiroshi;
 Funakura, Shoji; Tokuda, Hiroyuki; Araki, Shingo; Kishimoto,
 Masaaki; Yamaguchi, Yoshio (Dainippon Ink and Chemicals, Inc.,
 Japan). Jpn. Kokai Tokkyo Koho JP 2003206413 A2 20030722, 12 pp.
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-3341 20020110.

GI



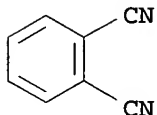
I

AB The pigments comprise halometallophthalocyanines I (M =
 Al, Si, Sc, Ti, V, Mg, Fe, Co, Ni, Zn, Ga, Ge, Y, Zr, Nb, In, Sn,
 or Pb; X = F, Cl, Br, I; m = 8-16; Y = F, Cl, Br, I, O, OH, SO₄; n
 = 0-2) and are coated with 3-25 parts (to 100 parts the
 phthalocyanine) 2-oxo-1,3-dioxolan-4-yl-bearing resins on
 surface. Color resists pigmented with the above pigments show
 excellent heat stability and transparency, and form color
 filter segments of less hue change on thermal hysteresis.

IT 91-15-6, Phthalodinitrile
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (yellowish-green halometallophthalocyanine pigments
 having oxodioxolanyl-containing resin coatings for color
 filters)

RN 91-15-6 HCAPLUS

CN 1,2-Benzenedicarbonitrile (9CI) (CA INDEX NAME)

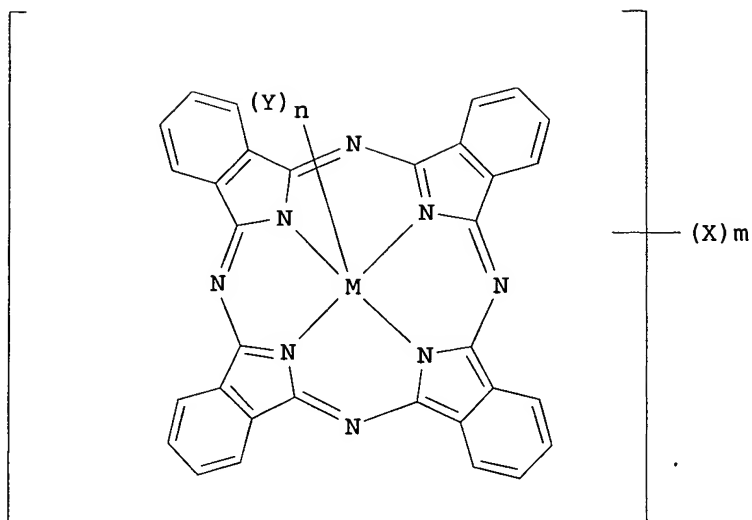


IC ICM C09B067-08
 ICS G02B005-20; G03F007-004

- CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 41, 73
- ST oxodioxolanyl resin coated **halometallophthalocyanine color filter**; yellowish green brominated chloroaluminum **phthalocyanine color filter**
- IT Polyesters, preparation
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(acrylic, pigment coatings; yellowish-green **halometallophthalocyanine** pigments having oxodioxolanyl-containing resin coatings for **color filters**)
- IT Optical filters
Pigments, nonbiological
(yellowish-green **halometallophthalocyanine** pigments having oxodioxolanyl-containing resin coatings for **color filters**)
- IT 331827-38-4P, Benzyl methacrylate-2,3-carbonatopropyl methacrylate-methacrylic acid copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pigment coatings; yellowish-green **halometallophthalocyanine** pigments having oxodioxolanyl-containing resin coatings for **color filters**)
- IT 14154-42-8DP, brominated 14320-04-8DP, Zinc **phthalocyanine**, brominated 210117-83-2P, Aronix M 7100-Kayarad DPHA copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(yellowish-green **halometallophthalocyanine** pigments having oxodioxolanyl-containing resin coatings for **color filters**)
- IT 85-44-9, Phthalic anhydride 91-15-6, Phthalodinitrile 7446-70-0, Aluminum chloride, reactions 7646-85-7, Zinc chloride, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(yellowish-green **halometallophthalocyanine** pigments having oxodioxolanyl-containing resin coatings for **color filters**)

L151 ANSWER 8 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
2003:481831 Document No. 139:60524 **Color filters**
and pigmented resists therefor having bright green color with large yellowness index. Katsube, Hiroshi; Kiuchi, Eiichi; Kimura, Akira; Kudo, Arata; Funakura, Shoji (Dainippon Ink and Chemicals, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2003176424 A2 20030624, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-378536 20011212.

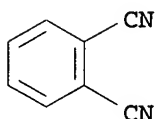
GI



AB The resists contain **halophthalocyanine I** (M = Al, Si, Sc, Ti, V, Mg, Fe, Co, Ni, Zn, Ga, Ge, Y, Zr, Nb, In, Sn, Pb, 2H; X = F, Cl, Br, I; m = 8-16 integer; Y = F, Cl, Br, I, O, OH, SO₄; n = 0-2 integer) as green pigments and sulfonic acid (salt)-containing condensed polycycles as yellow pigments.

IT 91-15-6, Phthalodinitrile
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (yellowish green resists containing halometallophthalocyanine*
 ** pigments and sulfonated quinophthalone pigments for
 ***LCD color filters)

RN 91-15-6 HCAPLUS
 CN 1,2-Benzenedicarbonitrile (9CI) (CA INDEX NAME)



IC ICM C09B067-22
 ICS C09B025-00; C09B047-06; C09B047-067; C09B067-20; G02B005-20;
 G02B005-22

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 38, 41, 73

ST color filter pigmented resist bright green;
 halogenated chloroaluminum phthalocyanine
 chlorohydroxyindenyloquinolinyloisoindoleone green filter
 LCD; yellowness increased green color
 filter halometallophthalocyanine pigment

IT Liquid crystal displays

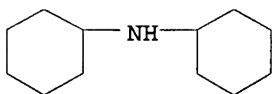
- (color filters for; yellowish green resists containing halometallophthalocyanine pigments and sulfonated quinophthalone pigments for LCD color filters)
- IT Pigments, nonbiological
(green; yellowish green resists containing halometallophthalocyanine pigments and sulfonated quinophthalone pigments for LCD color filters)
- IT Photoimaging materials
(photopolymerizable; yellowish green resists containing halometallophthalocyanine pigments and sulfonated quinophthalone pigments for LCD color filters)
- IT Pigments, nonbiological
(yellow; yellowish green resists containing halometallophthalocyanine pigments and sulfonated quinophthalone pigments for LCD color filters)
- IT Optical filters
(yellowish green resists containing halometallophthalocyanine*
** pigments and sulfonated quinophthalone pigments for
***LCD color filters)
- IT 14154-42-8DP, halogenated 14320-04-8DP, Zinc phthalocyanine, halogenated 30125-47-4DP, C.I. Pigment Yellow 138, sulfonated 210117-83-2P, Aronix M 7100-Kayarad DPHA copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(yellowish green resists containing halometallophthalocyanine*
** pigments and sulfonated quinophthalone pigments for
***LCD color filters)
- IT 85-44-9, Phthalic anhydride 91-15-6, Phthalodinitrile 7446-70-0, Aluminum chloride, reactions 7646-85-7, Zinc chloride, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(yellowish green resists containing halometallophthalocyanine*
** pigments and sulfonated quinophthalone pigments for
***LCD color filters)
- L151 ANSWER 9 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
2000:442925 Document No. 133:215362 Quenching of a Photosensitized Dye through Single-Electron Transfer from Trivalent Phosphorus Compounds. Yasui, Shinro; Tsujimoto, Munekazu; Itoh, Kenji; Ohno, Atsuyoshi (Tezukayama College, Nara, 631-8585, Japan). Journal of Organic Chemistry, 65(15), 4715-4720 (English) 2000. CODEN: JOCEAH. ISSN: 0022-3263. Publisher: American Chemical Society.
- AB Photoreactions were studied of trivalent phosphorus compds. RP3 (R = alkyl, aryl, alkoxy) with Rhodamine G in aqueous acetonitrile. The RP3 compds. quenched fluorescence of Rhodamine 6G via single-electron transfer (SET). The rate consts. k_p for the overall SET process were determined by the Stern-Volmer method. The rate was nearly constant at a diffusion-controlled limit in the region of $E_{1/2}(1) < 1.3$ V (vs Ag/Ag+), whereas $\log k_p$ depended linearly on $E_{1/2}(1)$ in the region of

$E_{1/2}(1) > 1.3$ V, the slope of the correlation line was $-\alpha F/RT$ with $\alpha = 0.2$. The SET step was exothermic when $E_{1/2}(1) < 1.3$ V and endothermic when $E_{1/2}(1) > 1.3$ V. The α -value (0.2) obtained in the endothermic region shows that the SET step from phosphorus compound to the excited Rhodamine B (Rho^+*) was irreversible in this region. Trivalent phosphorus radical cation generated in the SET step underwent an ionic reaction with water in the solvent rapidly enough to make the SET step irreversible. In contrast, the SET from amines and alkoxybenzenes to Rho^+* was reversible when the SET step was endothermic, meaning that the radical cations generated in the SET step underwent rapid "back SET" in the ground.

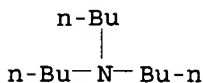
IT 100-61-8, N-Methylaniline, properties 101-83-7,
Dicyclohexylamine 102-82-9, Tributylamine
103-49-1, Dibenzylamine 109-89-7, Diethylamine,
properties 111-92-2, Dibutylamine 121-44-8,
Triethylamine, properties 124-40-3, N,N-Dimethylamine,
properties 142-84-7, Dipropylamine
RL: PEP (Physical, engineering or chemical process); PRP
(Properties); PROC (Process)
(quenching of fluorescence of Rhodamine B by trivalent
phosphorus compds. and other quenchers)
RN 100-61-8 HCAPLUS
CN Benzenamine, N-methyl- (9CI) (CA INDEX NAME)

Me-NH-Ph

RN 101-83-7 HCAPLUS
CN Cyclohexanamine, N-cyclohexyl- (9CI) (CA INDEX NAME)



RN 102-82-9 HCAPLUS
CN 1-Butanamine, N,N-dibutyl- (9CI) (CA INDEX NAME)



RN 103-49-1 HCAPLUS
CN Benzenemethanamine, N-(phenylmethyl)- (9CI) (CA INDEX NAME)

Ph-CH₂-NH-CH₂-Ph

RN 109-89-7 HCAPLUS

*CN Ethanamine, N-ethyl- (9CI) (CA INDEX NAME)



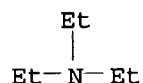
RN 111-92-2 HCAPLUS

CN 1-Butanamine, N-butyl- (9CI) (CA INDEX NAME)



RN 121-44-8 HCAPLUS

CN Ethanamine, N,N-diethyl- (9CI) (CA INDEX NAME)



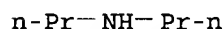
RN 124-40-3 HCAPLUS

CN Methanamine, N-methyl- (9CI) (CA INDEX NAME)



RN 142-84-7 HCAPLUS

CN 1-Propanamine, N-propyl- (9CI) (CA INDEX NAME)



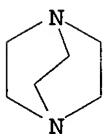
CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST rhodamine dye fluorescence quenching trivalent phosphorus compd; photoinduced electron transfer quenching rhodamine fluorescence phosphine compd

IT 91-16-7, 1,2-Dimethoxybenzene 100-61-8, N-Methylaniline, properties 101-83-7, Dicyclohexylamine 102-82-9, Tributylamine 103-49-1, Dibenzylamine 104-93-8, 4-Methylanisole 109-89-7, Diethylamine, properties 111-92-2, Dibutylamine 121-44-8, Triethylamine, properties 124-40-3, N,N-Dimethylamine, properties 135-77-3, 1,2,4-Trimethoxybenzene 142-84-7, Dipropylamine 150-78-7, 1,4-Dimethoxybenzene 151-10-0, 1,3-Dimethoxybenzene 603-34-9, Triphenylamine 32527-64-3
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
 (quenching of fluorescence of Rhodamine B by trivalent phosphorus compds. and other quenchers)

L151 ANSWER 10 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN

- 2000:69079 Document No. 132:195835 Synthesis of homodimeric monomethine cyanine dyes as noncovalent nucleic acid labels and their absorption and fluorescence spectral characteristics. Deligeorgiev, Todor G.; Gadjev, Nikolai I.; Timtcheva, Ilijana I.; Maximova, Vera A.; Katerinopoulos, Haralambos E.; Foukaraki, Evangelia (Faculty of Chemistry, University of Sofia, Sofia, 1126, Bulg.). Dyes and Pigments, Volume Date 2000, 44(2), 131-136 (English) 1999. CODEN: DYPIDX. ISSN: 0143-7208. Publisher: Elsevier Science Ltd..
- AB Several novel homodimeric asym. monomethine cyanine dyes based on the thiazole orange (TO) chromophore were synthesized via an improved synthetic procedure. The two TO chromophores [1-(ω -bromoalkyl)-4-[(3-methyl-2-(3H)-benzothiazolylidene)methyl]quinolinium iodides], with different chain lengths of the methylene linker between the quinolinium ring and the quaternary ammonium nitrogen, were connected by bisquaternization with N,N,N',N'-tetramethyl-1,3-propanediamine, N,N,N',N'-tetramethyl-1,6-hexanediamine, 1,4-diazabicyclo[2.2.2]octane, and 4,4'-bipyridine. The homodimeric dyes have a high molar absorptivity (ϵ 130 000-180 000 l mol⁻¹ cm⁻¹) at 505-506 nm. In the presence of ds DNA, their fluorescence maxima were located at 530-534 nm and the fluorescence quantum yields were in the range 0.48-0.96. Fluorescence maxima between 560-650 nm and fluorescence quantum yields of 0.3-0.8 were observed in the presence of ss DNA.
- IT 280-57-9, 1,4-Diazabicyclo[2.2.2]octane
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; preparation of cyanine dyes as fluorescent nucleic acid labels)
- RN 280-57-9 HCAPLUS
- CN 1,4-Diazabicyclo[2.2.2]octane (8CI, 9CI) (CA INDEX NAME)



- CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 9, 73
- ST fluorescent homodimeric monomethine cyanine dye prepn; DNA noncovalent label fluorescent dye; nucleic acid fluorescent dye noncovalent label
- IT 110-95-2 111-18-2 280-57-9, 1,4-Diazabicyclo[2.2.2]octane 553-26-4, 4,4'-Bipyridine 4329-95-7 32409-86-2, 1-(4-Bromobutyl)-4-methylquinolinium bromide 58992-56-6, 1-(3-Bromopropyl)-4-methylquinolinium bromide
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; preparation of cyanine dyes as fluorescent nucleic acid labels)

L151 ANSWER 11 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
1999:659462 Document No. 131:287742 Reactive dyes and their use.

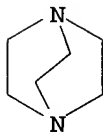
Brock, Earl David; Lewis, David Malcolm; Yousaf, Taher Iqbal (The Procter & Gamble Company, USA). PCT Int. Appl. WO 9951684 A1 19991014, 82 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1998-US6559 19980402.

AB Reactive dyes are disclosed comprising: (a) at least one chromophore moiety, (b) at least one nitrogen-containing heterocycle, (c) a linking group to link each chromophore moiety to each nitrogen-containing heterocycle; characterized in that at least one nitrogen-containing heterocycle is substituted with at least one thio derivative and at least one quaternized nitrogen derivative. The reactive dyes have high exhaustion and fixation values, particularly on cellulosic substrates such as cotton, and show significant improvements in terms of reducing spent dyes in effluent, increasing dye affinity to the substrate, increasing the dye-substrate covalent bonding, increasing the ability to dye substrates at room temperature, decreasing the amount of dye that is removed during the post dyeing "soaping off process" and therefore simplifying the post dyeing "soaping off process" traditionally associated with dyeing cotton with fiber reactive dyes, and reduction of staining of adjacent white fabrics. In addition, the prepared dyes provide more intense dyeings and require less levels of salt for dyeing cotton substrates. In an example, Procion Red MX-8B is treated with mercaptoacetic acid and then isonicotinic acid to give a dye.

IT 280-57-9DP, DABCO, reaction products with halogen-containing dyes and thiols
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (dye; production of nitrogen heterocycle reactive dyes containing thio and quaternary ammonium groups)

RN 280-57-9 HCAPLUS

CN 1,4-Diazabicyclo[2.2.2]octane (8CI, 9CI) (CA INDEX NAME)



IC ICM C09B062-02

ICS C09B062-503

CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

Section cross-reference(s): 40, 45, 62

IT 77-92-9, uses 110-16-7, 2-Butenedioic acid (2Z)-, uses 110-17-8, 2-Butenedioic acid (2E)-, uses 6915-15-7, Malic acid

RL: NUJ (Other use, unclassified); USES (Uses)

(buffers for dyeing with prepared nitrogen heterocycle reactive dyes containing thio and quaternary ammonium groups)

IT 55-22-1DP, Isonicotinic acid, reaction products with halogen-containing dyes and thiols 59-67-6DP, Nicotinic acid, reaction products with halogen-containing dyes and thiols 60-24-2DP, Mercaptoethanol, reaction products with halogen-containing dyes and amines 68-11-1DP, Mercaptoacetic acid, reaction products with halogen-containing dyes and amines 70-49-5DP, Mercaptosuccinic acid, reaction products with halogen-containing dyes and amines 108-77-0DP, Cyanuric chloride, reaction products with sulfatoethylsulfonylaniline, halogen-containing dyes, thiols and amines 123-81-9DP, Ethylene glycol bis(thioglycolate), reaction products with halogen-containing dyes and amines 280-57-9DP, DABCO, reaction products with halogen-containing dyes and thiols 1118-68-9DP, Dimethylaminoacetic acid, reaction products with halogen-containing dyes and thiols 2494-89-5DP, 4-(2-Sulfatoethylsulfonyl)aniline, reaction products with cyanuric chloride, halogen-containing dyes, thiols and amines 12226-08-3DP, Procion Red MX 8B, reaction products with thiols and amines 71902-16-4DP, Drimarene Brilliant Red K 4BL, reaction products with thiols and amines 246220-94-0DP, Drimalan Red F-B, reaction products with thiols and amines 246255-73-2P 246255-74-3P 246255-76-5P 246255-78-7DP, reaction products with halogen-containing dyes and amines

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(dye; production of nitrogen heterocycle reactive dyes containing thio and quaternary ammonium groups)

L151 ANSWER 12 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN

1999:659461 Document No. 131:287741 Reactive dye compounds. Brock, Earl David; Lewis, David Malcolm; Yousaf, Taher Iqbal (The Procter & Gamble Company, USA). PCT Int. Appl. WO 9951683 A1 19991014, 72 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1998-US6541 19980402.

AB Reactive dyes are disclosed having a fixation value on cellulosic substrates of $\geq 95\%$ as measured by the Fixation Value Tech. Test Method (at 2:1 standard depth). In addition, the dyes have high exhaustion values and high efficiency values and show significant improvements in terms of reducing spent dye in effluent, increasing dye affinity to the substrate, increasing the dye-substrate covalent bonding, increasing the ability to dye substrates at room temperature, decreasing the amount of dye that is removed during the post dyeing "soaping off process" and therefore simplifying the post dyeing "soaping off process" traditionally associated with dyeing cotton with fiber reactive dyes, and reduction of staining of adjacent white fabrics. The prepared dyes, which have a nitrogen heterocycle substituted with a quaternized nitrogen

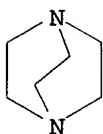
derivative, provide more intense dyeings and require less levels of salt for dyeing cotton substrates. In an example, Procion Red MX-8B is treated with mercaptoacetic acid and then isonicotinic acid to give a dye suitable for cotton, wool, or nylon.

IT 280-57-9DP, DABCO, reaction products with halogen-containing reactive dyes, nicotinic acids, and mercapto compds.

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dye; production of quaternary ammonium reactive dye derivs.)

RN 280-57-9 HCAPLUS

CN 1,4-Diazabicyclo[2.2.2]octane (8CI, 9CI) (CA INDEX NAME)



IC ICM C09B062-02

ICS C09B062-503; C09B062-20; C09B062-04

CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

Section cross-reference(s): 40

IT 246255-78-7DP, reaction products with Procion Red MX-8B and nicotinic acid

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(dye; production of quaternary ammonium reactive dye derivs.)

IT 55-22-1DP, Isonicotinic acid, reaction products with halogen-containing reactive dyes, amines, and mercapto compds. 59-67-6DP, Nicotinic acid, reaction products with halogen-containing reactive dyes and mercapto compds. 60-24-2DP, Mercaptoethanol, reaction products with halogen-containing reactive dyes and nicotinic acids 68-11-1DP, Mercaptoacetic acid, reaction products with halogen-containing reactive dyes, amines, and nicotinic acids 70-49-5DP, Mercaptosuccinic acid, reaction products with halogen-containing reactive dyes and nicotinic acids 108-77-0DP, Cyanuric chloride, reaction products with halogen-containing reactive dyes, sulfatoethylsulfonylaniline and nicotinic acids 123-81-9DP, Ethylene glycol bis(thioglycolate), reaction products with halogen-containing reactive dyes and nicotinic acids 280-57-9DP, DABCO, reaction products with halogen-containing reactive dyes, nicotinic acids, and mercapto compds. 1118-68-9DP, Dimethylaminoacetic acid, reaction products with halogen-containing reactive dyes and mercapto compds. 2494-89-5DP, 4-(2-Sulfatoethylsulfonyl)aniline, reaction products with halogen-containing reactive dyes, cyanuric chloride and nicotinic acids 12226-08-3DP, Procion Red MX-8B, reaction products with nicotinic acids, amines, and mercapto compds. 71902-16-4DP, Drimarene Brilliant Red K 4BL,

reaction products with mercaptoacetic acid and nicotinic acid 246220-94-ODP, Drimalan Red F-B, reaction products with mercaptoacetic acid and nicotinic acid 246255-73-2P 246255-74-3P 246255-76-5P
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (dye; production of quaternary ammonium reactive dye derivs.)

L151 ANSWER 13 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN

1999:90479 Document No. 130:131778 Photopolymerizable composition for color filter preparation. Sakurai, Kouichi; Nemoto, Hiroaki; Kumano, Atsushi (JSR Corporation, Japan). Eur. Pat. Appl. EP 893737 A2 19990127, 30 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1998-113829 19980723. PRIORITY: JP 1997-212711 19970724; JP 1997-243568 19970826; JP 1997-244854 19970827; JP 1997-276630 19970925.

AB A photopolymerizable composition comprises (A) a colorant containing a quinacridone pigment, a mixture of an isoindolinone pigment and a yellow organic pigment, or a mixture of copper phthalocyanine blue and a green pigment, (B) an alkali-soluble resin, (C) a polyfunctional monomer, and (D) a photopolymerization initiator. The photopolymerizable composition is useful for the production of an additive or subtractive color filter which is used in a reflection-type color liquid-crystal display device.

IC ICM G03F007-027

ICS G02B005-20

CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST photopolymerizable compn color filter display device; quinacridone pigment color filter display device

IT Optical filters

(color; photopolymerizable compns. containing quinacridone pigments for preparation of)

IT Liquid crystal displays

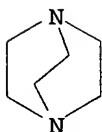
(photopolymerizable compns. containing quinacridone pigments for preparation of color filters for)

IT Photoimaging materials

(photopolymerizable; containing quinacridone pigments for preparing color filters for liquid-crystal display devices)

IT 147-14-8, Copper phthalocyanine 475-71-8, C.I. Pigment Yellow 24 980-26-7, C.I. Pigment Red 122 1047-16-1, C.I. Pigment Violet 19 2387-03-3, C.I. Pigment Yellow 101 2512-29-0, C.I. Pigment Yellow 1 3089-17-6, C.I. Pigment Red 202 3573-01-1, C.I. Pigment Red 209 4216-01-7, C.I. Pigment Yellow 108 4531-49-1, C.I. Pigment Yellow 17 5045-40-9, C.I. Pigment Yellow 109 5102-83-0, C.I. Pigment Yellow 13 5280-80-8, C.I. Pigment Yellow 95 5468-75-7, C.I. Pigment Yellow 14 5567-15-7, C.I. Pigment Yellow 83 5580-57-4, C.I. Pigment Yellow 93 5590-18-1 5979-28-2, C.I. Pigment Yellow 16 6358-31-2, C.I. Pigment Yellow 74 6358-37-8, C.I. Pigment Yellow 55 6358-85-6, C.I. Pigment Yellow 12 6407-74-5, C.I. Pigment Yellow 60 6486-23-3, C.I.

- Pigment Yellow 3 6528-34-3, C.I. Pigment Yellow 65 10294-40-3, C.I. Pigment Yellow 31 12225-18-2, C.I. Pigment Yellow 97 12225-21-7, C.I. Pigment Yellow 100 12225-23-9, C.I. Pigment Yellow 106 12236-62-3, C.I. Pigment Orange 36 13515-40-7, C.I. Pigment Yellow 73 14359-20-7, C.I. Pigment Yellow 113 14832-14-5, Copper perchlorophthalocyanine 15680-42-9, C.I. Pigment Yellow 129 15790-07-5, C.I. Pigment Yellow 104 21405-81-2, C.I. Pigment Yellow 117 22094-93-5, C.I. Pigment Yellow 81 25157-64-6, C.I. Pigment Yellow 150 29204-84-0, C.I. Pigment Yellow 153 29920-31-8, C.I. Pigment Yellow 120 30125-47-4, C.I. Pigment Yellow 138 31775-20-9, C.I. Pigment Yellow 152 31837-42-0, C.I. Pigment Yellow 151 32432-45-4, C.I. Pigment Yellow 98 35636-63-6, C.I. Pigment Yellow 175 36888-99-0, C.I. Pigment Yellow 139 61512-63-8, C.I. Pigment Yellow 20 61968-84-1, C.I. Pigment Yellow 116 63661-26-7, C.I. Pigment Yellow 156 68134-22-5, C.I. Pigment Yellow 154 68187-51-9, C.I. Pigment Yellow 119 68516-73-4, C.I. Pigment Yellow 155 68610-86-6, C.I. Pigment Yellow 127 68610-87-7, C.I. Pigment Yellow 114 71819-76-6, C.I. Pigment Red 206 71819-77-7, C.I. Pigment Red 207 71832-85-4, C.I. Pigment Yellow 168 72102-84-2, C.I. Pigment Orange 64 76233-82-4, C.I. Pigment Yellow 166 79953-85-8, C.I. Pigment Yellow 128 84632-50-8, C.I. Pigment Orange 71 90268-23-8, C.I. Pigment Yellow 126 219863-59-9
- RL: TEM (Technical or engineered material use); USES (Uses)
(photopolymerizable compns. for color filter preparation containing)
- IT 90-93-7, 4,4'-Bis(diethylamino)benzophenone 7189-83-5
29570-58-9, Dipentaerythritol hexaacrylate 141655-30-3, Benzyl methacrylate-2-hydroxyethyl methacrylate-methacrylic acid copolymer
- RL: TEM (Technical or engineered material use); USES (Uses)
(photopolymerizable compns. for color filter preparation containing quinacridone pigments and)
- L151 ANSWER 14 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
1998:474056 Document No. 129:110111 Perylene-based dye intermediates, their preparation by a single-step decarboxylation, and their use. Langhals, Heinz; Von Unold, Petra (Germany). Ger. Offen. DE 19700990 A1 19980716, 16 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1997-19700990 19970114.
- AB Perylene-3,4:9,10-tetracarboxylic acid dianhydride (I) (and its derivs.) may be decarboxylated in the presence of noncondensable amines to give perylene-3,4-dicarboxylic anhydride (II), perylene-4-carboxylic acid, or perylene-3,4-dicarboximide in 24-76% yields. Thus, I was heated with iso-Pr₂NEt, Zn(OAc)₂ dihydrate, and imidazole to give 25% II. Other amines used were DABCO, 3-amino-3-ethylpentane, and DBU.
- IT 280-57-9, DABCO
- RL: CAT (Catalyst use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(decarboxylation catalyst/imide nitrogen source; production of dye precursors from perylenetetracarboxylic dianhydride)
- RN 280-57-9 HCAPLUS
- CN 1,4-Diazabicyclo[2.2.2]octane (8CI, 9CI) (CA INDEX NAME)



IC ICM C07D493-00
ICS C07D493-02; C07D471-00; C07D471-02

CC 41-9 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

ST perylenetetracarboxylic dianhydride decarboxylation selective amine **catalyst**; dye precursor perylenecarboxylic deriv prodn; pigment precursor perylenecarboxylic deriv prodn

IT Decarboxylation **catalysts**
(amines; in production of dye precursors from perylenetetracarboxylic dianhydride)

IT Amines, uses
RL: CAT (Catalyst use); USES (Uses)
(decarboxylation **catalysts**; production of dye precursors from perylenetetracarboxylic dianhydride)

IT 280-57-9, DABCO 6674-22-2, DBU
RL: CAT (Catalyst use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(decarboxylation **catalyst**/imide nitrogen source; production of dye precursors from perylenetetracarboxylic dianhydride)

IT 30346-87-3, Methylimidazole
RL: CAT (Catalyst use); USES (Uses)
(decarboxylation **catalyst**; in production of dye precursors from perylenetetracarboxylic dianhydride)

IT 91-22-5, Quinoline, uses 108-48-5, 2,6-Lutidine 110-86-1, Pyridine, uses 288-32-4, Imidazole, uses 557-34-6, Zinc acetate 585-48-8, 2,6-Di-tert-butylpyridine 1571-51-3, 3-Amino-3-ethylpentane 5970-45-6, Zinc acetate dihydrate 7087-68-5, Diisopropylethylamine 69010-98-6, Tetramethylpiperidine
RL: CAT (Catalyst use); USES (Uses)
(decarboxylation **catalyst**; production of dye precursors from perylenetetracarboxylic dianhydride)

IT 7350-88-1P, Perylene-3-carboxylic acid 33955-44-1P, Perylene-3,4-dicarboximide 117364-74-6P, Perylene-3,4-dicarboxylic anhydride
RL: IMF (Industrial manufacture); PREP (Preparation)
(production of dye precursors from perylenetetracarboxylic dianhydride)

L151 ANSWER 15 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
1997:558751 Document No. 127:163180 Pigment dispersion composition and color resist ink. Yokoyama, Naoki; Kitamura, Kenichi (Nippon Steel Chemical Co., Ltd., Japan; Nippon Steel Corp.). Jpn. Kokai Tokkyo Koho JP 09176511 A2 19970708 Heisei, 8 pp. (Japanese).
CODEN: JKXXAF. APPLICATION: JP 1995-349603 19951221.

AB In a pigment dispersion composition which consists of organic pigment,

organic solvent, and minutely dispersed component, the minutely dispersed component consists of an acidic derivative of an organic pigment and a cationic comb graft copolymer which has cationic groups in the trunk polymer section. The inks are useful in color filters for liquid crystal displays. A pigment dispersion was prepared from anthraquinonyl red, sulfonated quinacridone red, and a polyethylenimine-poly(12-hydroxystearic acid) graft copolymer.

IT 50641-30-0D, Polyxylylenepolyamine, poly(2-hydroxypropylene)-, graft polymers with polycaprolactone
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (pigment dispersion composition and color resist ink)

RN 50641-30-0 HCAPLUS
 CN Poly(iminomethylenephenylenemethylene) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IC ICM C09B067-46
 ICS B01F017-52; C09B067-20; C09C003-10; C09D011-10; C09D017-00;
 G02B005-20; G03F007-027

CC 42-6 (Coatings, Inks, and Related Products)
 Section cross-reference(s): 74

ST comb graft copolymer pigment dispersion; color resist ink pigment dispersion; filter color liq crystal display

IT 9011-14-7D, PMMA, graft polymers with glycidyl methacrylate polymer methacrylates 24980-41-4D, Polycaprolactone, graft polymers 25067-05-4D, Poly(glycidyl methacrylate), dimethylaminomethylated, methacrylates, graft polymers with PMMA 25068-38-6D, Bisphenol A epoxy resin, polyaminomethylated, graft polymers with polycaprolactone 25248-42-4D, Polycaprolactone, graft polymers 50641-30-0D, Polyxylylenepolyamine, poly(2-hydroxypropylene)-, graft polymers with polycaprolactone 193766-16-4D, graft polymers with PMMA 199297-67-1
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (pigment dispersion composition and color resist ink)

IT 147-14-8, Copper phthalocyanine 147-14-8D, Phthalocyanine blue, sulfonated 1328-53-6D, Phthalocyanine green, chlorinated brominated 1328-53-6D, Phthalocyanine green, sulfonated chlorinated 39283-39-1D, Quinacridone red, sulfonated 39283-39-1D, Quinacridone red, terephthalic acid monoamidomethylated 117848-73-4, Anthraquinone Red
 RL: TEM (Technical or engineered material use); USES (Uses)
 (pigment dispersion composition and color resist ink)

L151 ANSWER 16 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
 1997:558127 Document No. 127:249336 Manufacture of microencapsulated pigment compositions and aqueous coloring solutions with dispersion stability. Takao, Nagayuki; Asada, Masahiko; Saito, Naoto (Dainippon Ink and Chemicals, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 09217019 A2 19970819 Heisei, 19 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-25297 19960213.

AB The compns., useful for coatings, textile printing, inks, color filters, are manufactured by mixing

(dry-ground) crude pigments with CO₂H-containing acrylic resin alkali salts and H₂O and/or aqueous solvents; mech. dispersing the mixts.; crystallizing the resins on the pigments by adding acids; and neutralizing the crystals by adding alkalies. Thus, 800 parts ground Sumitone Fast Violet RL 4R (carbazoledioxazine violet pigment) was mixed with resin (prepared from Bu methacrylate 175, Bu acrylate 10.7, β-hydroxyethyl methacrylate 37.5, and methacrylic acid 26.8 parts) 800, dimethylethanolamine (I) 44.4, and H₂O 2355.6 parts at 75° for 5 h, dispersed, mixed with HCl to pH 4.9, and neutralized with I to give a pigment composition. A textile printing paste was prepared using the pigment composition to show good coloring of cotton satin.

IT 74-89-5DP, Methylamine, reaction products with perylenetetracarboxylic anhydride
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (microencapsulated pigment compns. for aqueous coloring solns. with dispersion stability)
 RN 74-89-5 HCAPLUS
 CN Methanamine (9CI) (CA INDEX NAME)

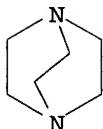
H₃C—NH₂

IC ICM C09B067-20
 ICS C08K005-16; C08L033-02; C08L033-06; C09B067-08; C09B067-46;
 C09C003-00; C09C003-10; C09D011-00
 CC 40-6 (Textiles and Fibers)
 Section cross-reference(s): 41, 42, 74
 ST pigment compn acrylic resin microencapsulation; coating pigment acrylic resin microencapsulation; textile printing pigment acrylic resin; ink pigment acrylic resin microencapsulation; color filter pigment acrylic resin
 IT 74-89-5DP, Methylamine, reaction products with perylenetetracarboxylic anhydride 128-69-8DP, Perylenetetracarboxylic anhydride, reaction products with methylamine 147-14-8P, Copper phthalocyanine
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (microencapsulated pigment compns. for aqueous coloring solns. with dispersion stability)
 IT 57-13-6, Urea, reactions 85-44-9, Phthalic anhydride 88-17-5, 2-Aminobenzotrifluoride 10291-28-8, 2,5-Di(p-toluidino)terephthalic acid 49658-03-9
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of pigments for microencapsulated pigment compns.)

L151 ANSWER 17 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
 1990:607849 Document No. 113:207849 Hydrogel dye film sensing elements and their preparation. Boesterling, Bernhard J.; Chang, Daniel M.; Madonik, Alex M.; Stone, Robert T. (Nellcor, Inc., USA). PCT Int. Appl. WO 9000572 A1 19900125, 85 pp. DESIGNATED STATES: W: AU, BB, BG, BR, DK, FI, HU, JP, KP, KR, LK, MC, MG, MW, NO, RO, SD, SU; RW: AT, BE, BF, BJ, CF, CG, CH, CM, DE, FR,

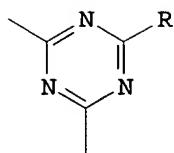
GA, GB, IT, LU, ML, MR, NL, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1989-US3015 19890710. PRIORITY: US 1988-217413 19880711.

- AB Reactive azo dyes R₂N:NR₃R₄ or R₄R₂N:NR₃ [R₂ = (un)substituted Ph or naphthyl or C₂-12 heterocyclyl aromatic radical; R₃ = sulfonated naphthol or aminonaphthol; R₄ is a reactive substituent capable of binding the dye mol. to a polymeric substrate without affecting the pH-indicating character of the dye] are prepared. The dyes have a pK_a of 6-8 and exhibit visible light absorbance that reversibly shifts as a function of pH. Also prepared are hydrogels and dye films incorporating the dyes and hydrogels. Sensing elements incorporating the dye films are described. The sensing elements are useful e.g. in body fluid analyzers for determination of pH or pCO₂ in e.g. blood. Thus, the diazonium salt of 2-bromo-4,6-dinitroaniline was reacted with Na 4-(2-bromoacrylamido)-5-hydroxynaphthalenesulfonate (preparation given), and the product was further reacted with Tris to form a reactive dye which was used, along with polyurethane hydrogel, to prepare a dye film. A multilayer sensing element incorporating the dye films of the invention is described, as is a body-fluid anal. apparatus for its use.
- IT 280-57-9P, 1,4-Diazabicyclo[2.2.2]octane
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (reaction of, with glycine, for polyurethane hydrogel dye film preparation, for multilayer sensing element)
- RN 280-57-9 HCAPLUS
- CN 1,4-Diazabicyclo[2.2.2]octane (8CI, 9CI) (CA INDEX NAME)

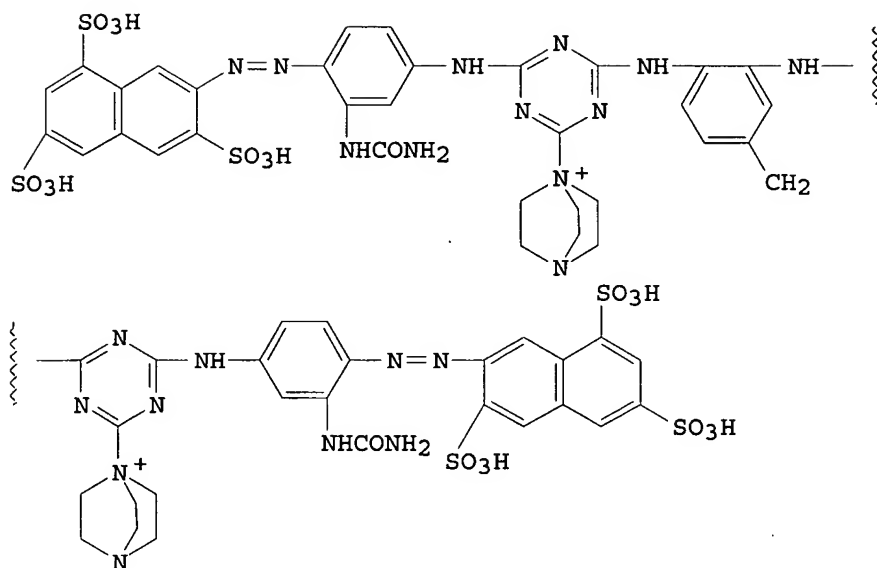


- IC ICM C08G018-32
 ICS C08G018-38; G01N021-78; G01N033-50
- CC 9-1 (Biochemical Methods)
 Section cross-reference(s): 35, 41
- IT Indicators
 (acid-base, azo dye reacted with hydrogel as, in multilayer sensing element)
- IT 280-57-9P, 1,4-Diazabicyclo[2.2.2]octane
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (reaction of, with glycine, for polyurethane hydrogel dye film preparation, for multilayer sensing element)
- L151 ANSWER 18 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
 1986:131447 Document No. 104:131447 Dyeing cellulose fiber materials. Imada, Kunihiro; Otake, Katsumasa; Omura, Takashi; Takeshita, Akira (Sumitomo Chemical Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 60181374 A2 19850917 Showa, 10 pp. (Japanese).
 CODEN: JKXXAF. APPLICATION: JP 1984-31132 19840220.

GI



I



II

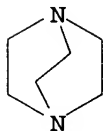
AB Cellulose fiber materials can be pad dyed with excellent fastness at 20-140° in weakly acidic or neutral aqueous dye bath by using dyes having hydrophilic groups and ≥ 1 group I (R = quaternized non-aromatic tertiary amine moiety in which the quaternary N is attached to the triazine C). Thus, a mercerized cotton knit was padded at 20-130° in an aqueous solution (pH 7) containing II, Na₂SO₄, NaH₂PO₄, and Na₂HPO₄, washed, soaped at 95°, washed, and dried to give a reddish yellow fabric with excellent fastness.

IT 280-57-9

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with chlorotriazine group-containing dyes)

RN 280-57-9 HCAPLUS

CN 1,4-Diazabicyclo[2.2.2]octane (8CI, 9CI) (CA INDEX NAME)



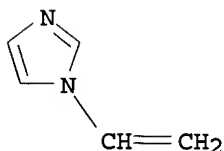
IC ICM D06P003-66

ICS C09B062-04
CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
IT 147-14-8D, derivs. 100833-79-2 100833-80-5 100833-81-6
100833-82-7 100833-83-8 101240-53-3 101240-56-6
RL: TEM (Technical or engineered material use); USES (Uses)
(dye, for cellulosic fibers, for dyeing at weakly acidic or neutral pH, manufacture of)
IT 57-14-7 280-57-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with chlorotriazine group-containing dyes)

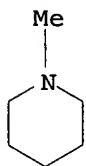
L151 ANSWER 19 OF 33 HCAPLUS COPYRIGHT 2005 ACS, on STN
1985:414527 Document No. 103:14527 Photoimaging units containing polymer blend type dye-mordanting layers. (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 60057836 A2 19850403 Showa, 16 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1983-166135 19830909.
AB Photog. units contain ≥ 1 layer containing a polymer of the general formula $ZxZ1y$ (Z = ternary amine group-containing vinyl monomer unit; $Z1$ = vinyl monomer unit without ternary amine or quaternary ammonium groups; $x = 2-100$ mol%; $y = 0-98$ mol%) and a polymer of the general formula $Z2uZ1v$ ($Z1$ = same as above; $Z2$ = quaternary ammonium group-containing vinyl monomer unit; $u = 2-100$ mol%; $v = 0-98$ mol%). The dry mordanting layers are useful in diffusion transfer color photog. materials and photothermog. materials. Thus, a polyethylene-laminated paper support was coated with a composition containing gelatin, poly(N-vinylimidazole), and divinylbenzene-N-methyl-N-(vinylbenzyl)piperidinium chloride-styrene copolymer to give a diffusion-transfer color photothermog. receptor sheet. A photothermog. photosensitive film containing benzotriazole Ag, Ag(Br,I) emulsion, a cyan dye-releasing compound was imagewise exposed, thermally developed, and contacted (at 80°) with the receptor to form cyan dye images on the receptor. The dye images showed high Dmax and good light fastness.
IT 25232-42-2
RL: USES (Uses)
(photoimaging material dye-mordanting layer containing quaternary ammonium group-containing polymer and)
RN 25232-42-2 HCAPLUS
CN 1H-Imidazole, 1-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

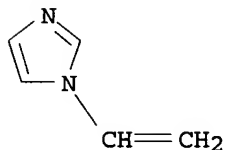
CRN 1072-63-5
CMF C5 H6 N2



IT 626-67-5D, reaction products with chloromethylstyrene-divinylbenzene-styrene copolymer 25232-42-2D, reaction products with benzyl chloride
 RL: USES (Uses)
 (photoimaging material **dye**-mordanting layer containing ternary amine group-containing polymer and)
 RN 626-67-5 HCAPLUS
 CN Piperidine, 1-methyl- (8CI, 9CI) (CA INDEX NAME)



RN 25232-42-2 HCAPLUS
 CN 1H-Imidazole, 1-ethenyl-, homopolymer (9CI) (CA INDEX NAME)
 CM 1
 CRN 1072-63-5
 CMF C5 H6 N2



IC ICM G03C007-00
 ICS C08F246-00
 CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic and Other **Reprographic** Processes)
 ST **dye** mordanting layer photothermog; diffusion transfer photog mordanting layer
 IT Mordants
 (quaternary ammonium polymer-ternary amine polymer blends as, for diffusion-transfer **dye** image formation systems)
 IT Photothermography
 (color, diffusion-transfer, receptors for, polymer blends for **dye** mordanting layer of)
 IT Photographic films
 (color, diffusion-transfer, **dye**-mordanting layer of, polymer blends for)
 IT 25232-42-2 27754-92-3
 RL: USES (Uses)
 (photoimaging material **dye**-mordanting layer containing quaternary ammonium group-containing polymer and)
 IT 100-44-7D, reaction products with poly(vinyl imidazole)

109-02-4D, reaction products with chloromethylstyrene-divinylbenzene copolymer 626-67-5D, reaction products with chloromethylstyrene-divinylbenzene-styrene copolymer 9036-15-1D, reaction products with methylmorpholine 25232-42-2D, reaction products with benzyl chloride 55844-94-5D, reaction products with methylpiperidine
 RL: USES (Uses)

(photoimaging material dye-mordanting layer containing ternary amine group-containing polymer and)

L151 ANSWER 20 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
 1985:54007 Document No. 102:54007 Diffusion-transfer color photothermographic photosensitive materials. (Konishiroku Photo Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 59124333 A2 19840718 Showa, 34 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1982-229674 19821230.

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
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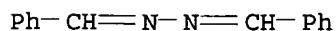
AB Diffusion-transfer color photothermog. materials contain photosensitive Ag halide, a dye-releasing compound, a flux, and ≥ 1 compound selected from I, II, III, and IV (R, R1 = H, amino, alkyl, alkenyl, aryl; R2 = H, OH, alkyl, alkenyl, aryl, alkoxy; R3 = H, alkyl, R7C6H4; R4 = alkyl, R7C6H4; R5, R6 = H, alkyl, phenyl; R7 = H, amino, R8CONH; R8 = alkyl; X = NR9, S; R9 = H, amino, alkyl, alkenyl, aryl; Z = SO2, CO). The mercapto compound reduces fog effectively without lowering Dmax. Thus, a photog. paper support was coated with a composition containing 4-hydroxybenzotriazole Ag, Ag(Br,Cl), poly(vinyl butyral), V, 1,3-dimethylurea, VI, and I (R = Me; R1 = H) to give a color photothermog. photosensitive unit. The photosensitive sheet was imagewise exposed, contacted with a receptor sheet and heated to form clear dye images with high Dmax and small Dmin on the receptor sheet.

IT 588-68-1

RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with potassium thiocyanate)

RN 588-68-1 HCAPLUS

CN Benzaldehyde, (phenylmethylene)hydrazone (9CI) (CA INDEX NAME)



IC G03C001-34; G03C007-00

ICA C07D249-12; C07D249-14; C07D285-12

CC 74-7 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 588-68-1

RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with potassium thiocyanate)

L151 ANSWER 21 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN

1982:113436 Document No. 96:113436 Silver-dye bleach bath concentrates with sulfuric acid-urea adducts. Buser, Hansjoerg; Morand, Adolf (Ciba-Geigy A.-G. , Switz.). Eur. Pat. Appl. EP 34793 A2 19810902, 31 pp. DESIGNATED STATES: R: BE, CH, DE, FR, GB, IT. (German). CODEN: EPXXDW. APPLICATION: EP 1981-101124 19810217. PRIORITY: CH 1980-1435 19800222.

AB Inorg. or hygroscopic acids can be converted to free-flowing powders or granules which are highly soluble and readily dissociate into their components by formation of adducts with acid amides or lactams. The adducts are used as acid components in dye , Ag, Ag-dye bleach, or blix baths at 10-200 g/L, together with complexing agents (thiourea, I-) 5-25, bleach catalysts (pyrazine, quinoxaline, phenazine) 0.05-10, antioxidants (reductone, mercaptan) 0.5-10, water-soluble oxidants (aromatic mono- or dinitro compds.) 1-30, and bleach accelerators (quaternary amines, tertiary phosphines) 1-5 g/L at 20-60°. For concs. (solid, paste, liquid) 2-20 times these amts. may be used, the adducts and oxidants together, sep. from the other ingredients. Highly useful are the adducts of pure H₂SO₄ (free from H₂O or SO₃) with 1 or 2 mol urea (m. .apprx.70-80°), obtained by adding the amide to the acid, letting the temperature rise to 70-100°, cooling, and grinding. Thus, a concentrate consisted of a solid (A) and a liquid (B): urea-H₂SO₄ 92, Na m-nitrobenzenesulfonate 8 g as A; 2,3,6-trimethylquinoxaline 2, KI 6 g, 3-mercapto-1,2-propanediol 2 mL, HOC₂H₄OEt 80 g, and water to 100 mL as B. For use as a Ag-dye bleach bath 1 part each of A and B was mixed with water 8 parts.

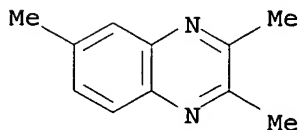
IT 17635-21-1

RL: USES (Uses)

(photog. silver-dye bleach baths containing sulfuric acid-urea adduct and)

RN 17635-21-1 HCAPLUS

CN Quinoxaline, 2,3,6-trimethyl- (8CI, 9CI) (CA INDEX NAME)



IC G03C005-52

CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST sulfuric acid urea adduct photog; silver dye bleach bath photog

IT Photographic processing

(silver-dye bleach bath concs. for, containing sulfuric acid-urea adducts)

IT 124-47-0 13507-15-8 17103-31-0 21351-39-3 80997-96-2 80997-97-3

RL: USES (Uses)

(photog. silver-dye bleach baths containing)

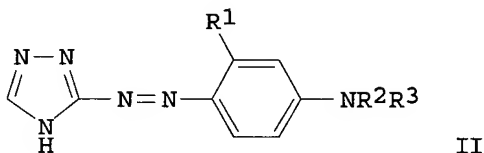
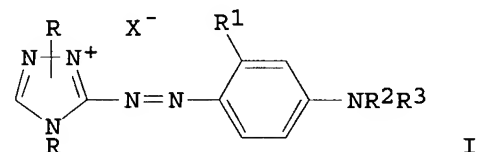
IT 50-81-7, uses and miscellaneous 96-27-5 13095-73-3
 17635-21-1 32387-79-4 32387-83-0 38251-37-5
 64225-46-3

RL: USES (Uses)

(photog. silver-dye bleach baths containing sulfuric acid-urea adduct and)

L151 ANSWER 22 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
 1981:517053 Document No. 95:117053 Cationic 1,2,4-triazolium-3-azo
 dyes. Fawkes, David Melville; Hutchings, Michael Gordon (Imperial
 Chemical Industries Ltd., UK). Brit. UK Pat. Appl. GB 2054631
 19810218, 7 pp. (English). CODEN: BAXXDU. APPLICATION: GB
 1980-15441 19800509.

GI



AB Water-soluble basic azo dyes I (R = alkyl; R1 = H, Me; R2, R3 = C2-7 alkyl or cycloalkyl; NR2R3 contains 5-9 C atoms; X- = organic or inorg. anion) were prepared by alkylating and quaternizing corresponding dye bases II. I give bright, blue-red shades on polyacrylonitrile; they are tinctorially stronger than C.I. Basic Red 22 and 46, and have good compatibility values (2.5-3.5). They are highly water-soluble and show good all-around fastness, including to severe steam pleating. They also dye acid-modified polyesters and polyamides. Thus, 3-amino-1,2,4-triazole [61-82-5] was diazotized and coupled with PhNBu2 [613-29-6] to give a dye base II (R1 = H, R2 = R3 = Bu) [78579-74-5] which was quaternized (Me2SO4, AcOH containing MgO, 80-90°, 1 h), drowned into water, screened through "Hyflo Supercel" and treated with 50% ZnCl2 to give I (R = Me, R1 = H, R2 = R3 = Bu, X- = 0.5ZnCl42-) [78799-05-0], which had compatibility value 3 and was 1.59 times stronger on polyacrylonitrile than C.I. Basic Red 46 and 1.64 times stronger than C.I. Basic Red 22.

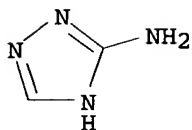
IT 61-82-5

RL: USES (Uses)

(coupling of diazotized, with dialkylanilines)

RN 61-82-5 HCAPLUS

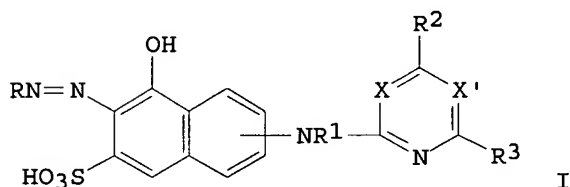
CN 1H-1,2,4-Triazol-3-amine (9CI) (CA INDEX NAME)



IC C09B043-00
 CC 40-4 (Dyes, Fluorescent Whitening Agents, and
 Photosensitizers)
 Section cross-reference(s): 28
 IT 61-82-5
 RL: USES (Uses)
 (coupling of diazotized, with dialkylanilines)

L151 ANSWER 23 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
 1978:531046 Document No. 89:131046 Phosphonic acid azo
 dyes. Andrew, Herbert Francis; Ramsay, David William
 Crichton; Stead, Cecil Vivian (Imperial Chemical Industries Ltd.,
 UK). Brit. GB 1500562 19780208, 10 pp. (English). CODEN:
 BRXXAA. APPLICATION: GB 1975-31194 19760414.

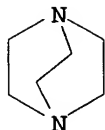
GI



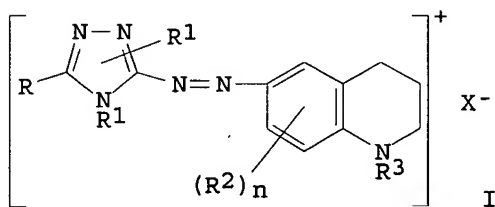
AB Bright red to orange monoazo dyes I (R = phosphonoaryl; R1 = H or
 Cl-4 optionally substituted alkyl; X, X1 = N or
 substituent-bearing C; R2,R3 = F, Cl, Br or substituents bonded by
 N, S, or O atoms) were prepared and used to dye cellulosic textiles.
 Thus, to sodium 2-N-acetylamino-5-naphthol-7-sulfonate
 [42360-29-2] was added diazotized 3-aminobenzenephosphonic acid
 [5427-30-5] to give the tri-Na salt [67665-00-3] of
 2-(acetylamino)-6-(3-phosphonophenylazo)-5-naphthol-7-sulfonic
 acid which was hydrolyzed to the amine (II) [59785-77-2] by 2N
 aqueous NaOH at 85-90°. To a suspension of 3.9 parts cyanuric
 chloride [108-77-0] in ice 30, water 30, and Me2CO 20 parts was
 added during 20 min 9.7 part II in 160 parts water and the mixture
 was stirred 3 h at 0-5° with 2N aqueous Na2CO3 to maintain a pH
 of 6. The azo dye (I; R = 3-phosphonophenyl, R1 = H, X = X1 = N,
 R2 = R3 = Cl; Na salt) [59785-83-0] was precipitated by 10 volume % NaCl
 and was used to dye cellulosic textiles by padding in the presence
 of dicyanamide and baking at 95-200°. Orange dyeings with
 good wet fastness were obtained.

IT 280-57-9

RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with chlorotriazinyl azo dye)
 RN 280-57-9 HCAPLUS
 CN 1,4-Diazabicyclo[2.2.2]octane (8CI, 9CI) (CA INDEX NAME)



IC C09B062-02
 CC 40-4 (Dyes, Fluorescent Whitening Agents, and
 Photosensitizers)
 ST phosphonic acid azo dye; reactive phosphonic
 azo dye; chlorotriazine azo dye; triazine phosphonic azo dye;
 cellulosic textile dye
 IT 280-57-9
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with chlorotriazinyl azo dye)
 L151 ANSWER 24 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
 1978:476325 Document No. 89:76325 Quarternized triazolium azo
 tetrahydroquinoline dyes. Fawkes, David Melville (Imperial
 Chemical Industries Ltd., UK). Brit. GB 1496246 19771230, 7 pp.
 (English). CODEN: BRXXAA. APPLICATION: GB 1975-29226 19760610.
 GI



AB Carboxylic acid- and sulfonic acid-free water-soluble cationic azo
 dyes I (R, R1 = H, optionally substituted alkyl, aryl; R2 =
 nonionogenic substituent; R3 = n-alkyl; X- = anion), useful for
 dyeing acrylic fibers, were manufactured by the alkylation of
 [(alkyltetrahydroquinolyl)azo]aminotriazole compds. Thus, to
 N-butyltetrahydroquinoline [6613-30-5] was added
 diazotized 3-amino-1,2,4-triazole [61-82-5] to give 2.5
 parts azo dye [63074-61-3]. To 1.87 parts dye in 30 parts
 glacial AcOH containing 0.7 parts MgO at 60° was added 5.0
 parts Me2SO4 and alkylation was continued 3 h at 80-5°.
 The product was drowned in 200 parts water and 1 part Hyflo
 Supercel and the solution was screened through a bed of Hyflo

Supercel and 3 parts by volume 100% ZnCl₂ was added to give 1.8 parts [N-butyltetrahydroquinolyl]azo]dimethyltriazolium tetrachlorozincate(2-) (I; R = R₂ = H; R₁ = Me; R₃ = Bu) [63249-90-1] which dyed acrylic fibers bright red-violet shades when applied from a weakly acidic dye bath.

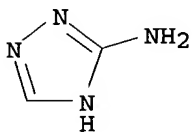
IT 61-82-5

RL: USES (Uses)

(coupling of diazotized, with tetrahydroquinoline)

RN 61-82-5 HCAPLUS

CN 1H-1,2,4-Triazol-3-amine (9CI) (CA INDEX NAME)



IC C09B043-00

CC 40-4 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)

IT 61-82-5

RL: USES (Uses)

(coupling of diazotized, with tetrahydroquinoline)

L151 ANSWER 25 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN

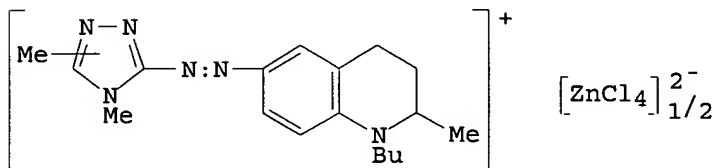
1976:525783 Document No. 85:125783 Azo dyes. Fawkes, David M.

(Imperial Chemical Industries Ltd., UK). Ger. Offen. DE 2555333

19760616, 45 pp. (German). CODEN: GWXXBX. APPLICATION: DE

1975-2555333 19751209.

GI



I

AB Eleven water-soluble azo dyes, useful for dyeing polyacrylonitrile and acid modified polyester and polyamide textiles, are prepared by coupling diazotized aminotriazoles with methyltetrahydroquinoline derivs. and quaternizing the [(tetrahydroquinolyl)azo]triazole derivs. Thus, 3-amino-1,2,4-triazole [61-82-5] was diazotized and coupled with N-1-n-butyl-2-methyltetrahydroquinoline [60274-17-1] and the yellow color base [60274-29-5] was quaternized with Me₂SO₄ and treated with ZnCl₂ to give the azo dye (I) [60332-79-8]. A polyacrylonitrile fabric was dyed in a bath containing I 0.15, 30% HOAc 0.75, and NaOAc 0.38 g/l. to give a red-violet dyeing with good lightfastness. I also produced lightfast red-violet dyeings on acid-modified

poly(ethylene terephthalate) and acid-modified polyamide fabrics.

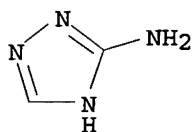
IT 61-82-5

RL: USES (Uses)

(coupling diazotized, with methyltetrahydroquinoline derivative)

RN 61-82-5 HCAPLUS

CN 1H-1,2,4-Triazol-3-amine (9CI) (CA INDEX NAME)



IC C09B039-00

CC 40-4 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)

IT 61-82-5 25637-43-8 34776-19-7 49607-51-4

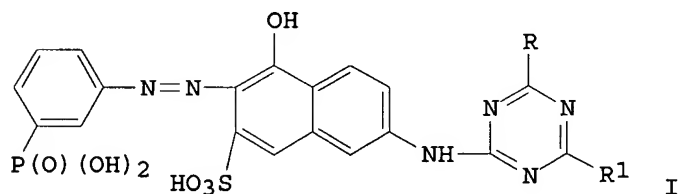
RL: USES (Uses)

(coupling diazotized, with methyltetrahydroquinoline derivative)

L151 ANSWER 26 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN

1976:448241 Document No. 85:48241 Mono azo dyes containing phosphonic acid groups. Anon. (UK). Research Disclosure, 145, 72-4 (No. 14555) (English) 1976. RD 145055 19760510. CODEN: RSDSBB. ISSN: 0374-4353. PRIORITY: RD 1976-145055 19760510.

GI



AB Reactive monoazo dyes (I, R = Cl, NH₂; R₁ = Cl, NH₂, m-HO₃SC₆H₄NH, pyridinio, OH, 4-aza-1-azoniabicyclo[2.2.2]octan-1-yl) were prepared and dyed cellulosic textile fast orange shades in the presence of dicyanamide under acidic conditions. Thus, 3-(HO)₂P(O)C₆H₄NH₂ [5427-30-5] was diazotized, coupled with 5,2,7-HO(AcNH)C₁₀H₅SO₃Na [42360-29-2], the azo compound [59785-82-9] isolated, hydrolyzed in aqueous NaOH, and condensed with cyanuric chloride to give I (R = R₁ = Cl) [59785-83-0]. The other I were similarly prepared

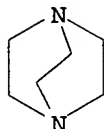
IT 280-57-9

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with [(dichlorotriazinyl)amino]hydroxy(phenylazo) naphthalenesulfonic acid derivative)

RN 280-57-9 HCAPLUS

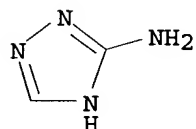
CN 1,4-Diazabicyclo[2.2.2]octane (8CI, 9CI) (CA INDEX NAME)



CC 40-4 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)
 ST phosphonic acid azo dye; reactive phosphonic azo dye; cellulose fiber azo dye
 IT 121-47-1 280-57-9
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with [(dichlorotriazinyl)amino]hydroxy(phenylazo) naphthalenesulfonic acid derivative)

L151 ANSWER 27 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
 1975:481186 Document No. 83:81186 Dyes for acid-modified polyester fibers. Ohkawa, Masaaki; Hanai, Masahiro; Abeta, Sadaharu; Kawabata, Shinobu (Sumitomo Chemical Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 49109682 19741018 Showa, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1973-23955 19730227.

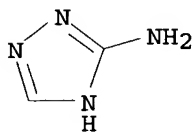
GI For diagram(s), see printed CA Issue.
 AB 1,2,4-Triazolium compds. I (R1, R2 = Me, Et; R3 = C1-4 alkyl; X- = anion; R2 in 1- or 2-position) were used to dye acid-modified polyester fibers. A typical dye, I (R1 = R2 = R3 = Me, X = ZnCl3) [55917-69-6], prepared by diazotizing 3-amino-1,2,4-triazole [61-82-5], coupling with N-cyclohexyl-N-methylaniline [18707-43-2], and N-dialkylating the product, gave lightfast bluish red shades on Dacron T65.
 IT 61-82-5
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (coupling of, with diazotized aminotriazole)
 RN 61-82-5 HCAPLUS
 CN 1H-1,2,4-Triazol-3-amine (9CI) (CA INDEX NAME)



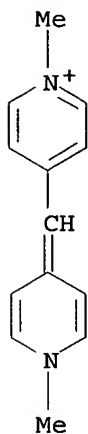
INCL 48B0; 48B111; 23D0
 CC 40-4 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)
 IT 61-82-5
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (coupling of, with diazotized aminotriazole)

L151 ANSWER 28 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN

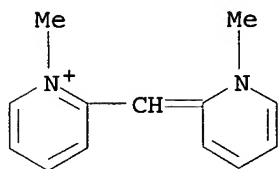
1975:461703 Document No. 83:61703 Basic dyes. Loehe, Konrad;
Papenfuchs, Theodor (Farbwerke Hoechst A.-G., Fed. Rep. Ger.).
Ger. Offen. DE 2341289 19750306, 24 pp. (German). CODEN: GWXXBX.
APPLICATION: DE 1973-2341289 19730816.
GI For diagram(s), see printed CA Issue.
AB Basic dyes (I, R = 3-H₂NCH₂C₆H₄CH₂, 2,4-Me₂C₆H₃, Bu₂N+HCH₂CH₂CH₂,
1,2-dimethyl-1,2,4-triazolium-3-yl; R1 = 3-H₂NCH₂C₆H₄CH₂,
Me₃N+CM_eCH₂, cyclohexyl, BuN+H₂CH₂CH₂CH₂, HOCH₂CH₂) were prepared
and used for dyeing acrylic and acid-modified
synthetic fibers fluorescent greenish yellow shades. Thus,
4-chloronaphthalic anhydride [4053-08-1] was added to
3-C₆H₄(CH₂NH₂)₂ [1477-55-0], heated to 100°,
stirred for 8-12 hr to give a dye base, and its treatment with HCl
and salting gave naphthalimide dye (II) [55772-17-3].
IT 61-82-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with chloronaphthalic anhydride)
RN 61-82-5 HCAPLUS
CN 1H-1,2,4-Triazol-3-amine (9CI) (CA INDEX NAME)



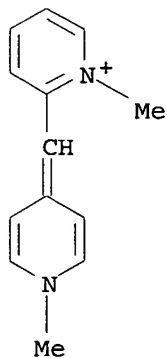
IC C09B
CC 40-6 (Dyes, Fluorescent Whitening Agents, and
Photosensitizers)
IT 61-82-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with chloronaphthalic anhydride)
L151 ANSWER 29 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
1974:522756 Document No. 81:122756 Fractional core charges model
applied to the theoretical study of cyanine dyes.
Ferre, Yves; Larive, Henri; Vincent, Emile J. (Cent. Rech.,
Kodak-Pathe, Vincennes, Fr.). Photographic Science and
Engineering, 18(4), 457-63 (English) 1974. CODEN: PSENAC. ISSN:
0031-8760.
AB The use of the fractional core charge model (Nishimoto, K. 1969)
in mol. orbital calcns. of 16 sym. and unsym. cyanine dyes
led to theoretical values for the oxidation
potential, pKa, and visible and uv spectra which were in
good agreement with the exptl. values.
IT 23664-38-2 52818-97-0 52818-98-1
RL: PRP (Properties)
(MO calcn. of, acidity, oxidation potential
and uv and visible spectra in relation to)
RN 23664-38-2 HCAPLUS
CN Pyridinium, 1-methyl-4-[(1-methyl-4(1H)-pyridinylidene)methyl]-
(9CI) (CA INDEX NAME)



RN 52818-97-0 HCAPLUS
 CN Pyridinium, 1-methyl-2-[(1-methyl-2(1H)-pyridinyliidene)methyl]-
 (9CI) (CA INDEX NAME)



RN 52818-98-1 HCAPLUS
 CN Pyridinium, 1-methyl-2-[(1-methyl-4(1H)-pyridinyliidene)methyl]-
 (9CI) (CA INDEX NAME)



CC 40-12 (Dyes, Fluorescent Whitening Agents, and
 Photosensitizers)
 ST cyanine dye mol orbital; Nishimoto model mol orbital
 IT Dyes, cyanine
 (MO calcn. of, acidity, oxidation potential
 and uv and visible spectra in relation to)

IT Acidity
 (of cyanine dyes, MO calcn. in relation to)
 IT Ultraviolet and visible spectra
 (of cyanine dyes, MO calcn. in relation to)
 IT Molecular orbital
 (of cyanine dyes, acidity, oxidation
 potential and uv and visible spectra in relation to)
 IT Electric potential
 (redox., of cyanine dyes, MO calcn. in
 relation to)
 IT 17944-45-5 23664-38-2 24144-05-6 24144-06-7
 33885-41-5 36954-41-3 47149-64-4 47545-94-8
 52818-97-0 52818-98-1 52818-99-2 52819-00-8
 52819-01-9 52819-02-0 52819-03-1 52819-04-2
 RL: PRP (Properties)
 (MO calcn. of, acidity, oxidation potential
 and uv and visible spectra in relation to)

L151 ANSWER 30 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN

1969:79127 Document No. 70:79127 Dichlorotriazinylaminofluorescein:
 a new fluorochrome for cyto- and histochemical detection of
 proteins. Barskii, V. E.; Ivanov, V. B.; Sklyar, Yu. E.;
 Mikhailov, G. I. (Inst. Mol. Biol., Moscow, USSR). Izvestiya
 Akademii Nauk SSSR, Seriya Biologicheskaya (5), 744-7 (Russian)
 1968. CODEN: IANBAM. ISSN: 0002-3329.

GI For diagram(s), see printed CA Issue.

AB Dichlorotriazinylamino-fluorescein (I, R = Cl) (II) was prepared by
 adding a filtered solution of 6 g. aminofluorescein in 180 ml. anhydrous
 Me₂CO at 5° dropwise with stirring to a solution of 3.6 g.
 cyanuric chloride in 30 ml. Me₂CO at 3-5°, stirring for 3
 hrs. at 3-5°, filtering the yellow precipitate, washing with 30
 ml. anhydrous Me₂CO and with 30 ml. petroleum ether (b.
 40-60°), and drying in a vacuum desiccator; yield 90.2%,
 λ_{maximum} 490 m μ , ϵ 82,200. II did not melt up to
 350°, but decomposed gradually. At slightly acid pH, II
 reacts specifically with the NH₂ groups of lysine and NH groups of
 histidine with formation of covalent bonds. Tissues stained with
 II show a very bright green fluorescence; the intensity
 distribution corresponds to the protein distribution in the
 tissue. To 10 mg. II in 5 ml. 60% aqueous Me₂CO was added 0.05 ml.
 PhNH₂ and after 20 hrs. 0.002 ml. of the mixture was applied on
 chromatographic paper impregnated with 0.05N Na₂HPO₃₄. After
 14-17 hrs. with BuOH saturated with a 0.05N solution of phosphor a
 fluorescent spot appeared, R_f 0.50. By using piperidine instead
 of PhNH₂ in a similar procedure, the R_f was 0.59. To 2 mg. II in
 1 ml. 0.1N phosphate buffer (pH 7.2) was added 5 mg. glycine;
 chromatog. in the same system resulted in a spot with R_f 0.07. To
 a mixture of 1 g. II in 10 ml. Me₂CO and 0.4 ml. PhNH₂ in 5 ml.
 Me₂CO was added dropwise 1 g. NaOH in 50 ml. distilled H₂O, the mixt
 stirred for 2 hrs. at 22°, and acidified after 20 hrs. to
 pH 6 to yield 86.5% I (R = NHPh) (III), m. >300°. Heating
 516.3 mg. III in 2 ml. Ac₂O for 1.5 hrs. at 120°,
 filtering the precipitated colorless crystals, and
 washing with 1.5 ml. Ac₂O and 2 ml. EtOH gave 116 mg.
 diacetate of III. Adding 20 ml. H₂O to the filtrate gave addnl.
 278.3 mg. product, m. 265-6° (CHCl₃).

CC 40 (Dyes, Fluorescent Brightening Agents, and Photosensitizers)

L151 ANSWER 31 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
1960:77256 Document No. 54:77256 Original Reference No. 54:14695h-i

The dyeing of acrylonitrile fiber. III. The appropriate oxidation-reduction potential of cuprous ion technique. Takase, Yoshimi (Univ. Gifu). Sen'i Gakkaishi, 16, 315-19 (Unavailable) 1960. CODEN: SENGAS. ISSN: 0037-9875.

AB Hydroxylamine sulfate is easier for controlling potential than any other material. The most effective p. d. for reduction with hydroxylamine sulfate is 207 ± 10 mv. With tech. hydroxylamine sulfate 3% should be added twice for CuSO₄ 5%. For the maximum effect, hydroxylamine sulfate should be added 3 times. It is better and more economical to apply the reducing agents divided in portions than to apply it in one lot judging from the results of dyed fiber reflectance. The pH of the dye bath is preferably at 2-4 and the deepest shade can be obtained at pH 3.

IT 25014-41-9, Acrylonitrile polymers
(fibers from, dyeing by Cu-ion method, control of pH and oxidation-reduction potential in)

RN 25014-41-9 HCAPLUS

CN 2-Propenenitrile, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

CMF C3 H3 N



CC 25 (Dyes and Textiles)

IT Hydrogen-ion concentration
(control of, of acid dye-cuprous ion baths in dyeing polyacrylonitrile fibers)

IT Fibers, synthetic
(from acrylonitrile polymers, dyeing with acid dyes by Cu-ion method, control of pH and oxidation-reduction potential in)

IT Dyeing
(of acrylonitrile-polymer fibers, with acid dye-cuprous ion method, control of pH and oxidation-reduction potential in)

IT Electric potential
(oxidation-reduction, control of, in dyeing acrylonitrile polymer fibers)

IT 25014-41-9, Acrylonitrile polymers
(fibers from, dyeing by Cu-ion method, control of pH and oxidation-reduction potential in)

IT 7803-49-8, Hydroxylamine
(potential control by, in dyeing polyacrylonitrile fibers with acid dye-cuprous ion method)

IT 7440-50-8, Copper

(salts, in dyeing of acrylonitrile-polymer fibers
with acid dyes)

L151 ANSWER 32 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
1960:31507 Document No. 54:31507 Original Reference No. 54:6132f-h
The dyeing of acrylonitrile fiber. II. Takase, Yoshimi
(Univ. Gifu). Sen'i Gakkaishi, 16, 55-60 (Unavailable) 1960.
CODEN: SENGAS. ISSN: 0037-9875.

AB The mechanism of reduction of CuSO₄ was studied. Polyacrylonitrile
fiber contains no cationic groups which give absorption sites for
anionic dyes. But the nitrile group coordinates with
cuprous ion, introducing new positively charged sites in the fiber
on which absorption of dye anions occurs. Cuprous ion
is produced from CuSO₄ with reducing agents at high temperature. Reduction
and coordinate absorption take place on the fiber simultaneously,
and oxidation-reduction potential, rate, and extent
of cuprous ion are important factors in determining its suitability for
acid dyes. Hydroxylamine sulfate is a more
satisfactory reducing agent than are other agents, as it reduces
CuSO₄ slowly and moreover can show almost theoretical oxidation-
reduction potential.

IT 25014-41-9, Acrylonitrile polymers
(fibers from, dyeing with acid dyes
, nitrile group coordination with Cu⁺ in)

RN 25014-41-9 HCAPLUS

CN 2-Propenenitrile, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

CMF C3 H3 N



CC 25 (Dyes and Textiles)

IT Dyes
(absorption of anionic, by acrylonitrile polymer fibers,
nitrile group coordination with Cu⁺ in)

IT Electric potential
(oxidation-reduction, of Cu in determining suitability for
acid dyes with acrylonitrile polymers)

IT 7803-49-8, Hydroxylamine
(copper sulfate reduction by, in dyeing acrylonitrile
polymers)

IT 25014-41-9, Acrylonitrile polymers
(fibers from, dyeing with acid dyes
, nitrile group coordination with Cu⁺ in)

IT 7758-98-7, Copper sulfate
(in acrylonitrile-polymer fiber dyeing, reduction and
coordination with nitrile group in)

L151 ANSWER 33 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
1957:64520 Document No. 51:64520 Original Reference No. 51:11721f-i
Chemistry and technique of dyeing of polyacrylonitrile

fibers by the copper(I)-ion process. I, II. Rath, H.; Rehm, H.; Rummeler, H.; Specht, E. (Deut. Forschungsinst. Textilind. Reutlingen-Stuttgart, Germany). Melliand Textilberichte (1923-1969), 38, 431-5,538-42 (Unavailable) 1957. CODEN: METXAK. ISSN: 0025-8989.

- AB The chemical configuration of the polyacrylonitrile fiber is discussed. The fiber is organophil and of anionic character. Acid dyes will only adhere if the fiber is charged with Cu(I) ions. Since Cu(I) salts are instable or H₂O insol., Cu(II) salts, such as CuSO₄, together with a reducing agent, such as (NH₂OH)2.H₂SO₄, are used. The resultng Cu(I) ions are probably bound coordinatively by the CN groups of the fiber, and the resulting cationic Cu complex is able to combine electrostatically with anionic dyes. The theory of this mechanism is explained. In order to avoid insufficient or overreduction, the oxidation-reduction potential of the dye bath should range from not less than 40 to not more than 80 mv. A constant oxidation-reduction potential is facilitated by adding the reducing agent in portions or by dropping it into the dye bath during the whole procedure. The method works best with low-mol. dyes which are fairly insensitive to reduction, such as azo dyes and acid dyes of the anthraquinone group. The dyes should not contain Cl ions to avoid formation of insol. CuCl in the dye bath. Methods with different reducing agents are discussed. Good results were obtained with FeSO₄, sulfite waste liquor, or a combination of these 2 agents. Furthermore, an electrolytic process is described whereby metallic Cu is oxidized to Cu(I) ions.
- IT 25014-41-9, Acrylonitrile polymers
(fibers from, dyeing by Cu-ion method)
- RN 25014-41-9 HCAPLUS
- CN 2-Propenenitrile, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

CMF C3 H3 N



- CC 25 (Dyes and Textiles Chemistry)
- IT Fibers, synthetic
(from acrylonitrile polymers, dyeing by Cu+-ion method)
- IT Electric potential
(oxidation-reduction, in dyeing of polyacrylonitrile fibers by Cu-ion process)
- IT 25014-41-9, Acrylonitrile polymers
(fibers from, dyeing by Cu-ion method)
- IT 7758-98-7, Copper sulfate
(in acrylonitrile-polymer fiber dyeing, reduction by hydroxylamine sulfate in)

IT 7440-50-8, Copper
(salts, in dyeing of acrylonitrile-polymer fibers)

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